VOL. XXX.
NO. 12.

MARCH, 1907.

$3.00 per Annum.
Single Copies, 25 Cents.

AMERICAN VETERINARY REVIEW.

EDITED BY

Prof. A. LIAUTARD, M.D., V.M.,

Member Central Society of Veterinary Medicine (Paris). Honorary Fellow Royal College of Veterinary Surgeons (England). Foreign Corresponding Member Academy of Medicine Bruxelles (Belgique).

Prof. ROSCOE R. BELL, D.V.S., AND ROBERT W. ELLIS, D.V.S.

WITH THE COLLABORATION OF

Prof. W. J. COATES, M.D., D.V.S., New York-American Veterinary College.
Prof. O. SCHWARZKOPF, D. V. M., U. S. Army, Camp Stotsenburg, Philippine Islands.
Prof. W. L. WILLIAMS, V. S., President New York State V. M. Society, Ithaca, N. Y.
Prof. S. STEWART, Kansas City Veterinary College, Kansas City, Mo.
M. H. MCKILLIP, M.D., V.S., of McKillip Veterinary College, Chicago, Ill.
WM. HERBERT LOWE, D. V. S., Pres't. N. J. State Board Vet. Med. Ex., Paterson, N. J.
Prof. M. H. REYNOLDS, University of Minnesota St. Anthony Park, Minn.
WM. H. DALRYMPLE, M.R.C.V.S., Veterinarian Louisiana Ag. Exp. Sta., Baton Rouge, La.
D. ARTHUR HUGHES, Ph.D., D.V.M., Veterinary Inspector Commissary Dept., U. S. Army, Army Building, Omaha, Neb.
Prof. LEONARD PEARSON, Chief Vet. Dept., University of Penn., etc., Philadelphia, Pa.
L. A. MERILLAT, V. S., Chicago Veterinary College, Chicago, Ill.
D. E. SALMON, D.V.M., former Chief U. S. Bureau of Animal Industry, Washington, D. C.
Prof. VERANUS A. MOORE, Cornell University Veterinary College, Ithaca, N. Y.
RICHARD P. LYMAN (Harvard), Sec'y A. V. M. A., Hartford, Conn.
C. J. MARSHALL, V. M. D., Sec. Pa. S. V. M. A., Philadelphia, Pa.

And several others.

CONTENTS.

The AMERICAN VETERINARY REVIEW is issued on the 1st of each month. *Manuscript and copy for insertion should be received by the 20th of the preceding month* to insure insertion in the next month's number. *Volume commences* with April number.

Communications relating to business (subscriptions, advertisements, and remittances), should be addressed to

ROBERT W. ELLIS, D.V.S.,
509 West 152d St., Boro. of Manhattan,
NEW YORK CITY.

Communications for publication or in relation thereto, should be addressed to

ROSCOE R. BELL, D.V.S.,
710 East Second Street, Boro. of Brooklyn,
NEW YORK CITY.

European Exchanges, books for review and personal letters should be addressed to
A. LIAUTARD, M D., V.M., 14 Avenue de l' Opera, Paris, France.

Entered at the Post Office at New York as Second-Class Matter.

Add Profit to Your Practice.

Almost daily you are called upon to recommend a good and dependable disinfectant for use in stables, kennels, etc. and

WHY NOT SELL ZENOLEUM

Here is a coal-tar derivative scientifically compounded — safe — non-poisonous — effective as a germ destroyer and remover and preventive of bad odor; and

WHY NOT SELL ZENOLEUM

Your patrons would much rather buy a disinfectant of you Doctor, than to go to a dealer for something uncertain in these days of substitution— and

WHY NOT SELL ZENOLEUM

A gallon of Zenoleum is very concentrated. Use it in *one per cent* solution. You see a gallon of Zenoleum makes *one hundred gallons* of strong disinfectant. Think of that!

WHY NOT SELL ZENOLEUM

The sales are easily made. Your clients believe in you. They accept your recommendation. We guarantee every gallon of Zenoleum to please, or money back. No argument, just plain, honest money. Sure!

WHY NOT SELL ZENOLEUM

A quart retails for 50 cents, costs you $4.00 a dozen delivered. See the profit.

A gallon retails for $1.50. Costs you $12.00 a dozen. Freight paid if you buy five gallons or more.

WHY NOT SELL ZENOLEUM

We will supply handsome window display — hangers — booklets—and send circulars to your clients if you send us the names.

Better write us at once.

THE ZENNER DISINFECTANT CO.

MANUFACTURING CHEMISTS.

24 Lafayette Avenue, corner Cass, DETROIT, MICH.

24 East Sandwich Street, WINDSOR, ONT.

AM

V
attac
if no
tions
to be
prote
or pr
and s
A
ville
they
in th
(
gles
(
taine
cura
dose
perio
allo
ous

AMERICAN VETERINARY REVIEW.

MARCH, 1907.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, January 15, 1907.

VACCINATION AGAINST STRANGLES.—Of all diseases which attack horses in their youth, none is more serious than strangles; if not by the mortality it gives rise to, by its many complications and sequelæ, which are so commonly observed, and it was to be expected that endeavors should be made to find means to protect horses from the disease and its complications by proper or prophylactic treatment; hence the application of serotherapy and sero-vaccination.

A few months ago, two French veterinarians (MM. Dassonville and De Vissocq) related a number of experiments which they had carried out in that direction, and which they resumed in the following conclusions:

(1) The immunization of horses against the virus of strangles can be realized.

(2) A serum against strangles, antigourmous, can be obtained, possessing an activity which seems manifest: *(a)* to the *curative* point of view, if care is taken to use it in sufficient dose and at the beginning of the infection (that is, during the period of incubation); (*b*) to the *preventive* point of view, in allowing the animal that has received it to resist, without serous troubles, the inoculation of a quantity of virus sufficiently

large to promote, if it has not been given, very important disorders.

(3) Consequently, sero-vaccination against strangles seems realizable.

It remains to realize it!

To another point of view, it seems to result from the observations of these authors: (1) That the infection of the streptococcus of strangles, in natural conditions, gives rise to thermic reactions, which precede by several days all external manifestations, and that the apparition of the classical symptoms occurs only when the disease is in full development. (2) To the practical point of view, the systematic recording of the temperature of horses, that have not yet had strangles, would permit the detection of the disease at its onset, an essential condition to reduce the severity of the symptoms and prevent its complications.

* * *

In several numbers of our esteemed contemporary, *La Semaine Vétérinaire*, the question is again brought forward by the same authors and resumed by saying:

Observation has proved that strangles, running its normal course, gives a relative immunity, which is sufficient in practice, allowing as it does the use of individuals in centres which are not exclusively centres of agglomeration of strangled animals, and that if there is a second attack, the disease will generally assume a mild form. Natural immunity is not absolute, but observation shows that it is practically sufficient and effective, made up of horses that have had the disease, and it seldom breaks out again among the horses. Therefore, in the struggle against the disease, it is not necessary to look in vain for an *absolute* immunization of the animals liable to take it, but to give them an immunity, as nearly as possible like that granted by a natural attack; and yet avoid the dangers that generally follow its development.

In their first communication, the authors had shown that a solid immunity could be granted to horses by the injections of

increasing doses of cultures of streptococci, and also that the dangers of those injections could be diminished by treating the vaccinated subjects with the serum of hyperimmunized horses.

With the permission of the Secretary of War, 104 horses were placed at the disposition of the authors for experimentation. Fifty-two of these received from the 2d to the 17th of August successive injections of serum—30, 40, 50 and 60 c.c. The other 52 remained as witnesses. Of the 52 serumized, 14 received no other treatment. They will, with their 14 witnesses, form the lot of experiment relating to the serumization. The other 38 were vaccinated. With their witnesses, they form the lot of experiment relating to sero-vaccination. Four cubic centimetres of culture were used. The vaccination was done on 23 horses, between 13 and 14 days after serumization, and in 15 horses from 6 to 7 days after the injection of serum. There was a slight rise of temperature after the injections, but it did not last. Two days after, it was normal.

* * *

The results obtained from those experiments were:

Of the horses that received the serumization only 28.57 per cent. took strangles; among the witnesses 78.57 per cent. took it also. Of the horses that were submitted to sero-vaccination, 29.72 per cent. took strangles, with a form which was never severe; 70.27 per cent. of the witnesses took the disease, and frequently with a severe form. Those results, both with serumization and sero-vaccination, are very satisfactory.

The results obtained by the sero-vaccination present a more precise character, because the experiment was made on a larger number of horses, and also because they were exposed to a more severe contamination.

The sero-vaccinated ones had acquired an immunity very near like that granted by the natural disease, and that is practically sufficient. Vaccination has never given rise to any accident, and other experiments, made on hundreds of horses, have proven it to be without danger.

In relation to the same subject, namely, the vaccination against strangles, I find in the *Revue Générale* an extract from the *Monatshefte fur praktische Thierheilkunde* of an article by Prof. Th. Kitt, of Munich. He had two colts, less than one year old; they never had nor were ever exposed to strangles. He injected through the veins 5 c.c. of very virulent culture, heated to 55° during 43 hours. No reaction. Three days after, a new injection of 5 c.c. of culture, heated 12 hours; then five times after during the seven following weeks, at various intervals, he injected doses of 10 c.c. of cultures, heated 10, 3, and 2 hours. Those injections were not followed by any disturbance or hyperthermia. After that, on three different, well-marked occasions, the two colts had opportunity to catch the disease, but remained healthy. Two months later, an attempt at experimental infection was made, consisting in the ingestion of a wineglassful of pus of strangles; this gave no results. A new attempt, made one month after, with fresh and very active pus from an abscess of the intermaxillary space, which was rubbed on the mucous membrane of the mouth and of the nose. A third trial, two months later, by immediate cohabitation with an animal in full suppuration and rubbing of pus on the nose and ingestion of the discharge from a parotid abscess. None of these experiments were followed by infection, the animals remaining refractory.

Similar experiments were made again on three other colts. One did not become refractory, but its treatment had not been as long as that of the others (3 injections of 10 c.c. in 13 days). The last injection had been followed with various manifestations. The subject submitted a few days after this last injection to cohabitation with an animal having strangles and having had pus applied on its mucous membranes, took a characteristic disease. The Professor thinks that immunization could have been obtained with this colt, as with the others, by the more practical method of the intravenous injections; it is evident that in the presence of the innocuity of those injections, a method of active immunization by this channel may be realized later.

STRABISMUS OF THE HORSE.—The records of strabismus are not very rare in veterinary medicine, but its study is not as complete as it is in human medicine. A very interesting communication relating to three special cases was made a short time ago at the Société Centrale, recording the observations made by three army veterinarians, MM. Clerget, Fayet and Nicolas. I will extract from it the description of the individual cases: (1) in making the ophthalmic examination of a four-year-old colt, just received in the regiment, the *abnormal situation of the papilla optici of the left eye* was noticed. Instead of being in the lower hemisphere of the eye, as in the normal condition, it seemed situated in the superior one, in such a manner that to see it it was necessary to look in the eye from below upwards instead of from upwards downwards. The fact might be due to a deviation in the axis of the eye downwards, or to an abnormality of position on the exit of the optic nerve. Comparative examination of the two ocular globes showed at once that the *left* was affected with *inferior strabismus.* Indeed, by taking the inferior palpebral border of the eye as bench-mark, it was found that on the *right*, it left uncovered between one and two millimetres of the sclerotic below the cornea, while on the *left* it covered four or five millimetres of the cornea. And, again, in raising the upper eyelids against the orbital border, one-half of a centimetre of the sclerotic could be exposed on the *right* eye, while on the *left* one centimetre was exposed. Consequently, there is inferior strabismus on the left side and the right is normal. The animal has also *deviation of the head.* It is held obliquely to the right in such a way that the tip of the nose is carried towards the side of the normal eye. This deviation is intermittent, very slight when the animal is eating, and looks towards the wall of his stall; it is principally marked when he looks out by the half door of his box-stall. The horse presents also a peculiar and interesting *asymmetry of the face.* By placing the head in its normal position, it is noticed that the left orbit, that of the strabic eye, is on a lower level than the right. It seems also as if the left side of the face was more incurved

than the right. However, there is nothing abnormal in the eye; the dimension and movements are normal.

* * *

(2) This horse is older than the first; he is eight years old. Arrived at his destination, he is placed in a box-stall, when at once his manner of carrying the head calls attention to him; its deviation to the right and the asymmetry of the face suggest the idea of inferior strabismus of the left eye, with papilla in the superior hemisphere, a suggestion which is confirmed by closer examination. The *strabismus is easily made out* with the bench-marks described in the first case, namely, inferior palpebral border and superior orbital arch, also the situation of the papilla in the superior hemisphere of the fundus of the eye. The *deviation of the head*, with the tip of the nose to the right, is very marked. The axial plane of the body passes the forehead about its middle, an indication that the entire neck is also twisted to the right. The deviation is also intermittent as in the first horse. While exercising it is less marked. The *asymmetry of the face* is accused by that of the orbits and also by that of *the ears*, the left being carried downwards. There is again double myopia, small floating bodies in both vitreous humors. The animal is very ugly, he strikes and bites, especially when approached from the left side.

Having died a few weeks after with a general infectious disease, an autopsy and examination was made, but gave no satisfactory results.

* * *

(3) The third case is that of a mare, in which the pupillar field of the right eye seemed to occupy the entire clear tapetum. Was it that the papilla was absent? No, but it is situated so low that with the normal dilatation of the pupil only a very small part of it can be seen.

A complete examination of the eye reveals: Superior strabismus of the right eye, with wide, almost circular, opening of the palpebral slit; inferior strabismus of the left eye, with marked dropping of the superior eyelid and retraction inwards

of the inferior eyelid; deviation of the head, with the tip of the nose turned to the right; asymmetry of position of the orbits, the left being the lower; and also of the ears, the left being again the lower.

* * *

In a few lines the conclusions of these interesting cases are:

(1) With eyes, objectively perfectly sound, in horses, three cardinal symptoms can be found associated, namely, *strabismus*, *asymmetry of the face*, and *deviation of the head.*

(2) The left inferior strabismus seems to impose the deviation of the head to the right.

(3) The unknown cause of strabismus must be looked for more in a congenital malformation of the bones of the head or of the muscles of the orbit than in a paralysis.

(4) The depreciation in value is more to the point of view of æsthetic than in that of execution of function.

* * *

AUTOMOBILE INJURIES TO DOGS.—One of the serious consequences of the creation of electric tramways and of the constantly greater circulation of automobiles has been a great increase in the number of accidents to people and to domestic animals. Indeed, in some localities, traveling has become so difficult and dangerous that it is almost an impossibility to pass in the streets where those vehicles are moving. Of all animals, dogs are the ones in which such accidents are most frequent, and this condition is apt to be the opening, for some practitioners, for a broad field of occupation, either as practitioners or again as experts to be called in a court of law to testify in suits for damages. In both cases, their knowledge and the value of their opinions can be considerably increased by individual experience as well as that of others.

This suggested to Prof. G. Hebrant to publish in the *Annales de Bruxelles* an article on "Injuries of Dogs by Automobiles."

The Professor has observed that these were always violent traumatisms, and that, no matter in what region they were found,

they were often accompanied by fractures, varying in severity and in location, but which would in many cases end in recovery, which is not surprising, taking into consideration the nature of the patient, its great resistance to septic and pyogenous infections and the habit that it has of entertaining a great condition of cleanliness by its system of licking its wounds, when it has a chance. But, besides this, there is another point upon which the Professor insists in relation to the cicatrization of open fractures. For many, those injuries are exceptionally severe and recover with difficulty and only after a long time, also only when the portion of bone that has been exposed and deprived of its periosteum has sloughed away. This is an error, or at least an exaggeration, as in many instances and after a time relatively short he has obtained complete recovery of open fractures, rather severe, without necrosis of bone or without a resection being necessary. The only essential condition to obtain this result is that the injured bone is kept in a complete aseptic state, protected from the contact of atmospheric air. Most thorough disinfection of the wound is the essential condition; it is not always necessary or advantageous to resort to the bistoury, the saw, or the bone nippers, but to allow the dead tissues to slough of themselves, and in that way greater surface of tissues will be preserved for the cicatrization of the trauma or the functional recuperation.

* * *

In closing his article Professor Hebrant gives the record of several cases of injuries inflicted by automobiles, and among them those of four open fractures, where he has obtained excellent results. (*a*) Open fracture of the right hind leg, where at first resection of the ends of the tibia and fibula was thought necessary. It was not done; wound dressed with simple bandage and closed in ten days, with consolidation of the fracture in a month. (*b*) Crushing and fracture of the left forearm. Here amputation had to be performed. Complete recovery in three weeks. (*c*) Crushing and fracture of the left hind leg; recovery; partial conservation of the claws. In this case, the

digits had been crushed, fractured; the metacarpal region also involved. Amputation was not resorted to. Wound was cleaned and aseptized, iodoform and boric acid dressing applied. Recovery in fifty days. (*d*) Fracture of the left forearm. Amputation at the elbow. Recovery in a month. The dog is still used for hunting.

The record of those interesting cases will increase the number of similar injuries which have found their way in other publications, but they will, besides, show younger practitioners that in many instances recovery is very likely to follow an injury which has the worst aspect, providing careful attention, proper treatment and wise patience are brought to bear towards the same end.

* * *

PURE CRYSTALLIZED BORIC ACID AN EXCELLENT ANTISEPTIC.—The antiseptic properties of boric acid are well known, but they are yet considered as very inferior to almost all the other agents of similar effects. At least, if we read Cadiot and Almy it is seen that for them boric acid, in concentrated solution (3 or 4 per cent.) does not possess (far from it) the antiseptic properties that Lister thought it had. About five times less active than phenic acid and a hundred times less than corrosive sublimate, it is only employed for the antisepsy of mucous membranes (eye, nasal and buccal cavities, ear, rectum, vagina, bladder).

Under the title of "New Treatment of Severe Sores or Wounds and in Particular of the Synovial, Articular or Tendinous Lesions with Crystallized Boric Acid," Mr. Busy, a French military veterinarian, publishes in the *Recueil de Medécine Vétérinaire* an article to the effect that, on the contrary, when used pure and in the crystallized condition, boric acid has antiseptic and anæsthetic properties, which class it at the head of all compounds of the same kind.

Mr. Busy says: "If one severe wound, such as the one made by the plunging of a broken shaft of a wagon into the muscles of the thigh, say 15 centimetres deep, is completely filled with

boric acid, the following is what is observed : The wound immediately after the first dressing throws out a certain quantity of serosity. This reaction always takes place, even on synovial structures. It seems as if the living tissues wanted to get rid of the foreign body, the pulverized acid. This secretion lasts but a short time. The acidification and saturation of the tissues of the wound take place and the inflammation is, so to speak, *iugulated.* There is a local anæsthesia produced, as there is no inflammatory œdema and therefore no pressure on the nerves. Of all the external or objective signs of inflammation, there only remain the granulating of the wound. If the saturation is kept up by additional application of acid, suppuration will not occur. The granulations may be rather pale, but their development remains the same. To resume, boric acid removes or prevents the apparition of the œdema, of the pain and of the suppuration, even without protecting dressing."

The author continues in illustrating his theory with a case of a large hæmatoma, in which he obtained a complete recovery in sixteen days. Then the case of an enormous abscess of the withers with very acute pain ; free opening, washing of the cavity, plugging it with boric acid, recovery in a few days. A case of fistula of the withers, another of a severe wound of the foot with disinsertion of the perforans, fracture of the semilunar crest complicated by synovitis and arthritis of the foot, have been followed by excellent results with the use of the acid in the crystallized form. Most severe injuries, broken knees, synovial wounds, arthritis and many others have been healed in the shortest length of time.

There is no doubt that if the facts reported by the author are not exaggerated, the application of this form of the acid is very important. Let us hope that further publications, more detailed, will allow the profession to judge.

* * *

RECORDS OF ABNORMALITIES.—As parallel to the communication of Dr. Harrison, made some time ago at one of the meetings of the A.V.M.A., I find in two of the numbers of the *Clinica*

Vétérinaria some notes of pathological anatomy observed at the abattoirs of Modena, which are of very great interest. They were recorded by Dr. Raffaele Pietro Rossi. I will mention only a few.

Two cases of double spleens, in pigs. In one, the two organs were atrophied and hanging attached to the great omentum, five centimetres apart; together they form a mass which in size and weight are about a quarter of those of a normal spleen. In the other, also attached to the omentum, one is normal in size and form and the other equally long but narrower, resting on the left portion of the stomach.

Two cases of *tumor in the cortical substance of the suprarenal capsules.* One, found in a steer, was as big as a small nut; the second was found in a cow.

In a pig a *portion of the peritoneum* was found *ossified.* It was in the left flank, at a point corresponding to the place where an incision for castration had been made. This neoformation weighed 195 grams.

Two cases of one *single kidney in calves.* Both animals were in very good condition. In one, aged three months, the left organ was absent and the right was of normal aspect.

By opposition, one case of *treble kidneys* was discovered in a horse. The animal was old, poor in flesh. The right and the left kidneys were in normal position, of good size and normal form. The third was between these, a little lower and under the vertebral column, oval in form, a little elongated and flattened, with a normal color.

In a steer affected with *tuberculosis*, lesions were found in the *cranium*, miliary caseous deposits being observed upon the right cerebral hemisphere.

Pulmonary melanosis was detected in a calf only 60 days old. If those deposits are not very rare in aged animals, it is certainly uncommon to see them in such a young individual.

In one sheep, fat, and in the best condition, there was *ectopia of the spleen.* Normal in form, size, color, and aspect, it was not in its normal situation. Instead of being situated on the

left side of the rumen, it was more on the right of the sublumbar region.

Finally, a *carcinoma of the vagina* was detected in a *cow*. On opening the uterus a tumor was observed at the neck. It was as big as an orange, opaque white in color, with a portion softened and ulcerated. The nature was made out by microscopical examination.

* * *

BIBLIOGRAPHY.—The bibliography of this month will be concise. I had so much of it in my last.

From the Bureau of Animal Industry, Bulletin No. 38, on "*Tuberculosis of the Food-Producing Animals*," by Dr. D. E. Salmon, a complete *résumé*, well prepared, for agriculturists, among which it ought to be distributed freely and which veterinarians would do well to consult. "*Order No. 137, Regulations Governing the Meat Inspection in the United States.*"

From Pretoria came the October, 1906, number of the *Transvaal Agricultural Journal*, full of good information on agricultural topics, with a veterinary section, containing articles from Dr. Arnold Theiler, C. E. Gray, M. R. C. V. S., and Thomas H. Dale, M. R. C. V. S.

From Canada, the report of the Veterinary Director-General, Dr. J. G. Rutherford, which contains valuable considerations upon the various contagious diseases in the Dominion, and also some well-illustrated cases of horses suffering with dourine. It contains very interesting statistics relating to the prevailing contagious outbreaks with which the veterinarians of Canada have had to deal. I read also the special report on glanders by Dr. Rutherford.

* * *

The most important work I have received is "*Surgical Diseases and Surgery of the Dog*," by Cecil French, Doctor of Veterinary Science (McGill University). It is a large volume of nearly 400 pages, with ninety-one illustrations, edited and published by the author in Washington, D. C. The contents are divided into 13 chapters. The first treats of General Surgery,

the following eleven of the diseases of regions, and the last of neoplasms. Among the illustrations many are original (photographs, I suppose), and some are reproductions from the French work of Cadiot and Breton, from which the author has borrowed much, giving due credit to those from whom he has quoted. At the end of each chapter and of each subdivision where the special diseases are considered, there is given a bibliography of the works which have been quoted by the author. This is an excellent work for reference, and it shows on the part of Dr. French a great deal of research and reading to make it up; French, German and English records are presented to the reader. The fifth, sixth, seventh, eighth and ninth chapters include all the affections of the abdomen, considered from a surgical point of view. They form what is probably the most important and interesting part of the work. It seems as if that part of the body in dogs was the one where surgical interference of great importance is most likely to be met with. Dr. French has had great experience in this specialty, I believe, and he could do justice to it. I think he has done it. His work will increase the literature on the subject and hold its place among works on general surgery and especially that of dogs, although I think his General Surgery is the weakest part of the publication.

New books on those subjects have been plentiful of late; let us have now one on general internal pathology up to date.

* * *

As a Christmas present, Prof. W. L. Williams has sent me the revised second edition of his excellent little work "*Surgical and Obstetrical Operations.*" It is not only a revised edition, but also an enlarged and improved one that Dr. Williams has published, and I am sure it will meet with as good success as the first. It contains more pages; it contains also several more plates, and, above all, has articles altered and, I think, made more scientific than in the previous issue. Among the principal changes that I notice in the second chapter is the introduction of a new operation (at least new for this edition), that for

roaring by excision of the vocal cords and ventricle of the larynx, and in the third chapter the operation for castration of cryptorchid horses. I certainly must congratulate the Doctor for having left out in this edition the old and barbarous method of amputating the tail. Such may perhaps be referred to in a work of general surgery, but ought not to be taught to young surgeons of our day. Keep on enlarging your little book, Doctor, and you will soon give us a large work on Operative Surgery. All of us will welcome it, I can assure you. A. L.

MILK HYGIENE THE TOPIC OF THE HOUR.

There is undoubtedly an awakening of interest all over this country in the question of the quality of the milk being consumed in the large cities. At last there seems to be a realization of the fact that milk, more than any other food product, is the most likely transmitter of the organisms of the deadliest diseases which affect mankind, aside from the changes which occur in milk itself as a result of gross errors in producing and handling it, or on account of its age. The daily papers are printing long articles dealing with these newly recognized dangers, and it is being shown that the organisms of typhoid fever, scarlet fever, diphtheria, tuberculosis, and other diseases are readily conveyed to individuals through a contaminated milk supply. While the necessity for the supervision of the hygiene of this universal food is being shown, there appears as yet to be no well-defined plan as to how this shall be done. There are a number of theoretical interests struggling for recognition, each contending that its system is the only one which can render milk wholesome. Those who believe that pasteurization is the universal panacea are particularly loud in their claims and insistent in their demands that no milk shall be permitted to be sold unless it has undergone this treatment; the bacteriologists contend that the bacterial count is the true index to the quality of milk that may be consumed by people with safety. But there are few, outside of members of the veterinary profession, who take the rational view that the source of the

supply is the point which should be attacked in order to deprive milk of its gravest dangers. If a decomposing animal carcass were perchance to find its way into the spring and pollute the drinking water, the sanest thing to do would be to remove the offending object from the spring, rather than to search for the number of organisms liberated in the water, or the process of heating the water to destroy the bodies of the germs present. So it is with milk production. Inspection of the source of supply by those who are competent to inspect will remove the factors of contamination, and if no errors are committed in its transportation, the quality will be right when it reaches the consumer. If a contagious disease exists in the herd which furnishes the milk, every diseased cow can be removed, and at once the danger from that source will be done away with; if transmissible disease affect human beings of the farm, steps can be taken to prevent their excreta from gaining access to the drinking water of the cattle or otherwise contaminating the milk products of that farm; if the hygienic conditions of the premises are faulty to an appreciable extent, the inspector can be clothed with sufficient authority to compel compliance with reasonable regulations by withholding permission to market the products of that farm until the improvements suggested are made. And by thus starting the milk from the farm in a practically pure state, and regulating its transportation and distribution, there will be little necessity for the heating of the milk to cook the disease-producing organisms, or of counting the germs in promiscuous specimens, condemning those which reach or exceed the prohibited number, irrespective of whether they are harmful or harmless. It has, for instance, been shown that a given specimen may contain a million bacteria to each cubic centimeter without rendering the milk unwholesome for human consumption, while on the other hand the bacterial count may be very low, yet the organisms may be of the most virulent type, for they may consist of tubercle bacilli, the bacilli of diphtheria, typhoid fever, or other serious disease. The mere enumeration of the organisms does not reveal their characters.

It is not the purpose of this article to deal exhaustively with the details of the various processes which are at present contending for recognition; that may be left for scientific discussion by those who have and are studying the problems technically. But it is our object to endeavor to impress upon veterinarians the fact that a great opportunity has arisen for them to again demonstrate to the world the value of veterinary science to mankind by not only pointing out the true and logical course to pursue to safeguard the milk supply, but they must lead in the movement; they must demonstrate the correctness of their position by doing the work. Every veterinarian must make of himself a veritable milk hygienist; he must know more about the subject than any other class of men who live upon the earth, whether they be members of the medical profession, bacteriologists or chemists. Above all, he has right and reason on his side, for he starts right by guarding the health of the cow that produces the milk, her environments, and the protection of the product from the time it leaves her udder until it enters the homes of the consumers.

Now let the veterinarian take advantage of his opportunities. First, he must educate himself, if his early advantages were not such as to have perfected his education along this line. The schools can no longer afford to ignore the chair of dairy and milk inspection, but must bring it prominently forward in their curricula. Those of our profession who have given great study to the important problems involved must take the initiative in forwarding the campaign of education, not only among their fellows, but they must direct the public in the proper channel of thought, to the end that enabling legislation may be secured to put into operation a thorough scientific inspection of every dairy which seeks to sell milk for the consumption of human beings.

The question is pressing strongly for solution; it will be but a short time until definite action will be taken—right or wrong.

Will the veterinarian lead; or will he follow?

BUSINESS EXHIBITS AT MEDICAL CONVENTIONS.

To those members of the American Veterinary Medical Association who have expressed disapproval of the custom of business firms exhibiting their wares in close proximity to the meeting room, with the approval of the officers of the Association, under the impression that it is unethical and partaking too much of commercialism, we commend an editorial in a recent number of the New York *Medical Journal.* Not that veterinary ethics need necessarily follow the usage in our sister profession, but the same gentlemen who criticize our methods usually hold before our eyes the conduct of the American Medical Association as the *sine qua non* to govern our actions in all such matters. The editorial in question was called forth by a circular recently issued to the members by the president of the American Surgical Trade Association, in which he says: "I ask your consideration and assistance in the important matter of medical convention abuse, which I intend making a feature of in my annual report. You are all aware of the exorbitant prices charged exhibitors for space and the detriment to our business by the exhibits of firms whose goods and methods can never merit the approval of the American Surgical Trade Association. Medical organizations must sooner or later recognize this if they desire our support at their meetings. This is one of the subjects where medical ethics has long been overlooked." The comments of the *Journal* are decidedly conciliatory, and it significantly remarks that it fears by the present policy that "*the goose that laid the golden eggs might be killed.*"

The policy pursued by the A. V. M. A. of requiring business firms to exhibit their goods in private rooms, outside of the convention hall, while devoid of remuneration to the Association, is in greater harmony with sincere medical ethics, and more magnanimous to those soliciting the patronage of veterinarians.

THE Ohio, Indiana, and Kentucky Veterinary Medical Associations have under consideration the formation of a tri-state meeting for next summer.

ORIGINAL ARTICLES.

THE SO-CALLED UPWARD LUXATION OF THE PATELLA OF THE HORSE.

(THE HOOKING OF THE INTERNAL PATELLAR LIGAMENT OVER THE INTERNAL CONDYLE OF THE FEMUR.)

By W. L. Williams,

Professor of Surgery and Obstetrics at the New York State Veterinary College, Ithaca, N. Y.

Presented to January Meeting Veterinary Medical Association New York County.

The stifle joint or knee of the horse offers the widest variation in form according to the position of the limb and the greatest complexity in its anatomy of any articulation in the body. Under these conditions it is not strange that there are conflicting views regarding diseases and accidents to this articulation and that among these we should find the greatest diversity of opinion in reference to dislocations of the patella, a bone which is subject to the widest latitude of movement to be found in the entire body. The conflict of opinion upon the question of patellar luxation has created the wildest confusion in veterinary literature, and although it has been discussed for a century we are still far from a clear and authentic description of the displacements to which this bone is subject.

Some points in the controversy are reasonably clear. We meet in practice, in all our domestic animals and especially in the horse, with a lateral luxation of the patella which may be caused by a congenital defect in the external condyle of the femur. In other cases in young animals it becomes established through a synovial distension of the capsular ligament of the patella largely as a result of rachitis or omphalo-phlebitis by which means it is lifted up above the external condyle and is drawn outward by the contraction of the muscles attached directly to its lateral side or to its external ligament. More rarely it is certainly possible for the patella to be dislodged externally by means of violence. Presumably also such violence

might be encountered as to cause a displacement of the patella inward over the internal condyle, though no such case has been recorded which was wholly free from doubt. The displacements of the patella due to great violence are not of much practical interest to the veterinarian, because they occur but rarely and would then be accompanied by such injuries to the ligamentous apparatus as to well-nigh preclude the possibility of recovery. The lateral or outward luxation is readily verified by post-mortem examination.

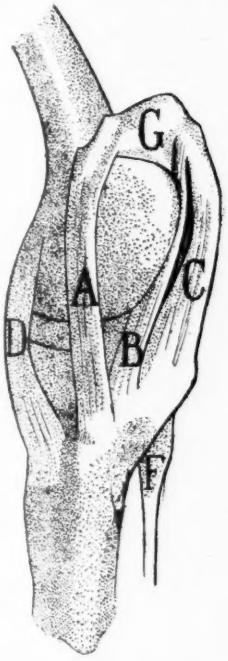


FIG. 1.

Classic illustration of the so called hooking fast of the internal patellar ligament over the internal femoral condyle, dependent upon a false dissection of the joint. The fatty cushions and aponeuroses have been dissected completely away.

A. Internal patellar ligament.
B. Middle ligament.
C. External ligament.

The great controversy regarding dislocation of the patella centres about the alleged upward luxation, or the hooking fast of the internal patellar ligament, over the internal femoral condyle. The confusion in the controversy is greatly heightened by case reports which are indefinite in character. Because of the anatomical complexity of the part, to which we have already alluded, different practitioners interpret variously those cases expressed by the sudden appearance of great rigidity of one or both posterior limbs, occurring invariably in a standing horse, almost always in the stall, the foot is apparently immovably fixed to the floor, and when the animal is forced to move, drags its limb behind it, intensely rigid, with every joint fixed except the hip. One practitioner, examining a given case, will conclude that the patella is dislocated laterally, like Percivall and others; another practitioner of equal standing, such as Moeller, Hoffman, and other recent writers, will examine the same case and conclude that the patella is dislocated upward, and a third veterinarian will be just as certain that no dislocation whatever exists. Under such conditions it is difficult to present conclusive arguments

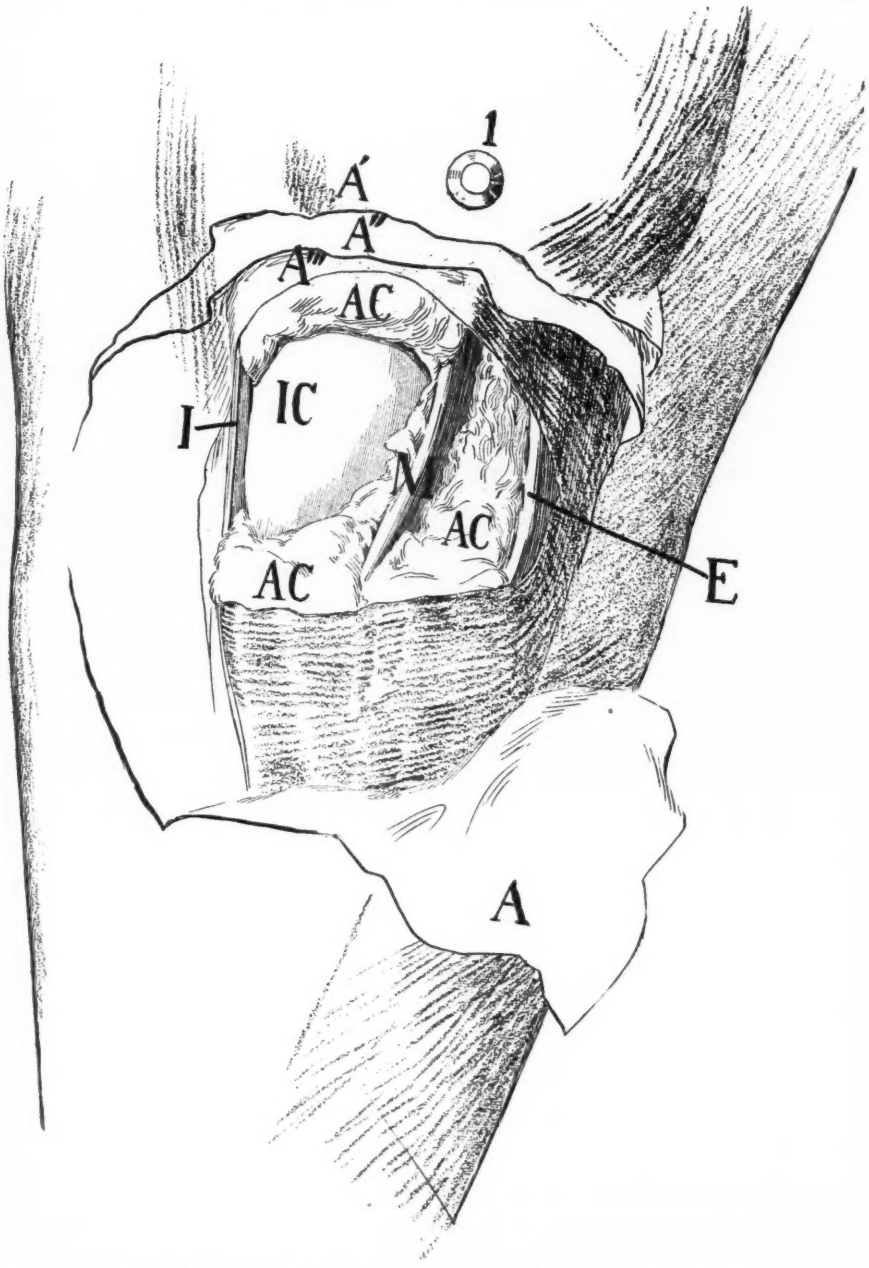


FIG 2. Dissection of the left stifle of a horse seen from in front. The skin has been completely removed.

A. The aponeuroses turned downwards from the deeper parts, A' A'' and A'''. Successive layers of aponeurosis incised at different levels.

AC. Adipose cushions. The superior one is enclosed between the synovial membrane and the deeper aponeurotic layer, A'''.

I, Internal patellar ligament. IC, Internal femoral condyle. M, Middle ligament.

E, External ligament. 1, Head of iron bolt passing through patella and femur to hold former in position of alleged upward luxation.

in reference to this somewhat mysterious affection, which is by far the most common of the alleged luxations of the patella.

We are well aware that virtually all of our recent authors upon veterinary surgery are a unit in holding that the affection consists of a hooking fast of the internal patellar ligament over the internal femoral condyle, against which conclusion we wish to submit some points of evidence.

The first argument which we would submit against the theory commonly accepted is the anatomical improbability of the occurrence. The profession at large is familiar with the classic illustration of a dissection of this articulation intending to show how the internal ligament becomes hooked over the condyle. We have copied this figure from the "Handbook of Veterinary Surgery and Obstetrics," by Bayer and Fröhner. This illustration, Fig. 1, is unjust, and depends upon a false dissection. Two essential structures have been removed in order to bring about the deceptive appearances which are here noted. They have dissected away the fatty cushion upon which the patella rests when drawn upward as far as possible upon the femur, as shown at AC, Figs. 5 and 6. They have also removed three important layers or fascia or aponeurosis as shown in Fig. 2 at A′, A″, A‴, and the fatty cushion, AC, and the synovial membrane upon which it rests. These items are of prime importance and their removal greatly modifies the correctness of the illustration.

If we study Figs. 5 and 6, the action of the fatty cushion becomes very evident and shows the practical impossibility of pushing the patella into the position which the false dissection in Fig. 1 would indicate. Some writers evade the influence of the fatty cushion between the femur and patella by evoking its atrophy in emaciated animals. The drawings presented are from greatly emaciated, old dissecting subjects, in which class of horses the alleged dislocation does not occur. The disease is most common in young, plump horses or colts, where the fatty cushions are larger than here represented. In Fig. 5, the patella has been forced into as nearly the alleged position as

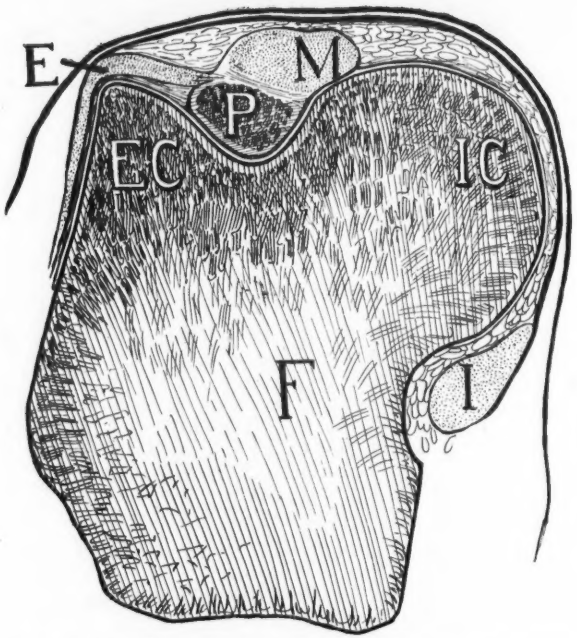


FIG. 3. Cross section through the lower portion of the patella and the femoral condyles. The patella is pushed upwards as high as possible, in the position of alleged upward luxation.

P, Patella at its extreme lower extremity. M, Middle patellar ligament at its point of origin on the patella. E, External ligament. I, Internal ligament showing a powerful aponeurosis passing from it over to the external ligament. IC, Internal, and EC, External condyles of femur.

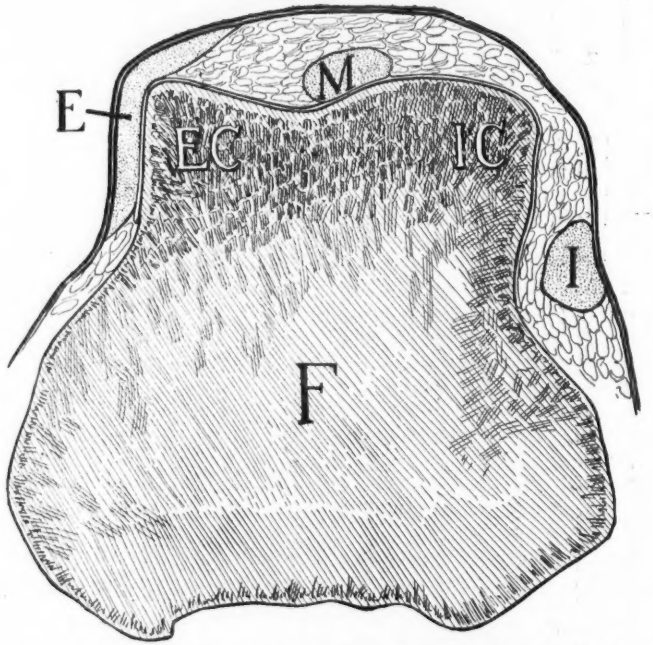


FIG. 4. A cross section of same joint as Fig. 3 at a lower level. Lettering same as in preceding. The aponeurosis is shown passing from the internal to the external ligament over the adipose cushion, while the middle ligament rests securely in the bottom of the trochlea.

possible by extending the limb forward and pushing the patella as far upwards as could be and fixing it there by means of a bolt passed through the patella and femur, and yet it does not seem possible that this bone should remain hooked fast over the condyle under the conditions which are here shown. If we turn to Fig. 2, we are again impressed with the improbability of this hooking fast. The three layers of aponeurosis, A′, A″, A‴, stretch across the entire region and are so powerful and so intimately connected with the internal and external ligaments that the condyle is prevented from projecting between the internal and middle ligaments so long as the fasciæ remain intact, and especially while the fatty cushion fills the space between the internal and middle ligaments and is held firmly in this position by the foregoing. If the aponeuroses were ruptured or strained, inflammation and lameness would result, which does not occur.

Whenever the muscles attached to the internal or external patellar ligament or to both are in a state of contraction they draw upon these aponeurotic sheets and by rendering them tense, force them down toward a level with these two ligaments and obliterate any great bulging between them into which the internal condyle might protrude.

Aside from the fatty cushion and aponeurosis the ligaments themselves are of such a character as to prevent the patella from becoming hooked fast as alleged. The most effective arrangements in this respect is shown in the middle ligament, the relations of which are illustrated in Fig. 6, where the longitudinal section of the joint is made through the middle of the trochlea. Here it is seen that with a very slight flexure of the joint the middle ligament is thrown upward by the trochlea in such a manner that the tension upon the patella is directed slightly upwards and would consequently tend to cause it to readily slip downward over the femur whenever flexion is begun.

In Fig. 5, the same idea is to some extent illustrated with the internal ligament, which is only partially in view, but is shown to be somewhat oblique so that it draws

across the summit of the internal condyle and thus tends to elevate the patella and cause it to slip over. In Fig 3, the cross section of the joint through the patella and the condyles again illustrates the obstacles to the hooking fast of this ligament. The close inspection of this figure will show that any tension exerted upon the external ligament, E, would tend to elevate the patella and thus obliterate it from

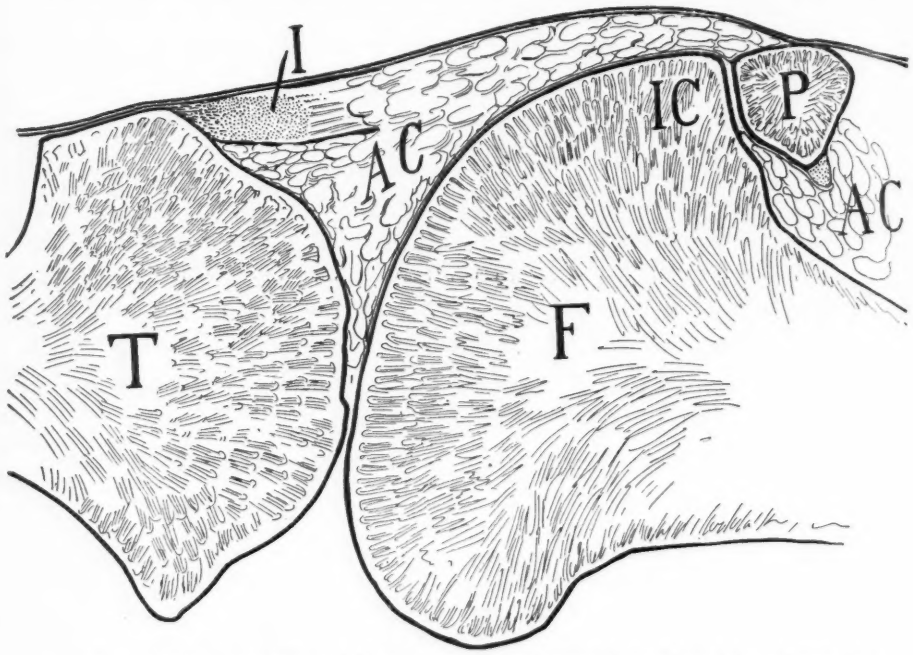


FIG. 5. Sagittal section of right stifle through the internal femoral condyle; the patella is forced upward as far as possible and secured in the position of alleged dislocation. T, Tibia. F, Femur. Other letters same as in preceding. The internal ligament, I, is severed obliquely and shows that it draws across the condyle in a manner to tend to release the patella. The heavy aponeurosis is shown attached to the patella and passing down to the tibia, over the adipose cushion.

any possible incarceration. The aponeurosis also clearly tends to prevent any undue projection of the condyle between the two ligaments. When a cross section of the joint is made a little lower down so that the patella is not involved as shown in Fig. 4, the improbability of this hooking fast becomes still more apparent because the external ligament is pressing upon the condyle in such a way as to tend to prevent such an occurrence,

while the middle ligament is resting directly upon the trochlea at a point which is higher than its attachment to the patella, and consequently draws upward upon it in such a manner as to cause its release. In addition to these considerations, even the false dissection delineated in Fig. 1, tends strongly to disprove the possibility of luxation, for if any one will take a joint thus dissected, and hook the patella upon the internal condyle, and then attempt to flex the articulation, it will be found that the patella promptly glides over the condyle, even though the specimen is old and synovia absent. If one desires to fix the patella in the alleged position, so that flexion cannot take place, it is found necessary to exert pressure upon the patella and hold it firmly down upon the femur. It, therefore, seems quite evident to us that a firm hooking fast over the internal condyle is an anatomical impossibility so long as the structures which we have outlined remain intact.

A second formidable objection to the theory of upward luxation is that the symptoms of the difficulty are not in harmony with the physiologic functions of the part. Such a dislocation as that alleged would extend the tibia upon the femur and would abolish all voluntary movement of all articulations of the limb from the stifle downward, but would not involve the movements of the limb upon the pelvis, and as a result, if the animal were forced to advance, the affected limb would be carried forward beneath the body and could not be extended backward, a condition which is directly opposite to that observed. The correctness of our view upon this point has been verified by experiment. A horse was chloroformed and the posterior limb extended as far forward as was possible, a hole was then drilled through the patella and femur, a strong iron bolt was inserted and the patella firmly fixed to the femur in the position of the alleged dislocation. The subject was then allowed to recover from the anæsthesia for a sufficient period of time to permit it to be walked for a short distance, after which it was destroyed. During progression the limb, the patella of which had been fixed in the position designated, was carried, rigidly extended,

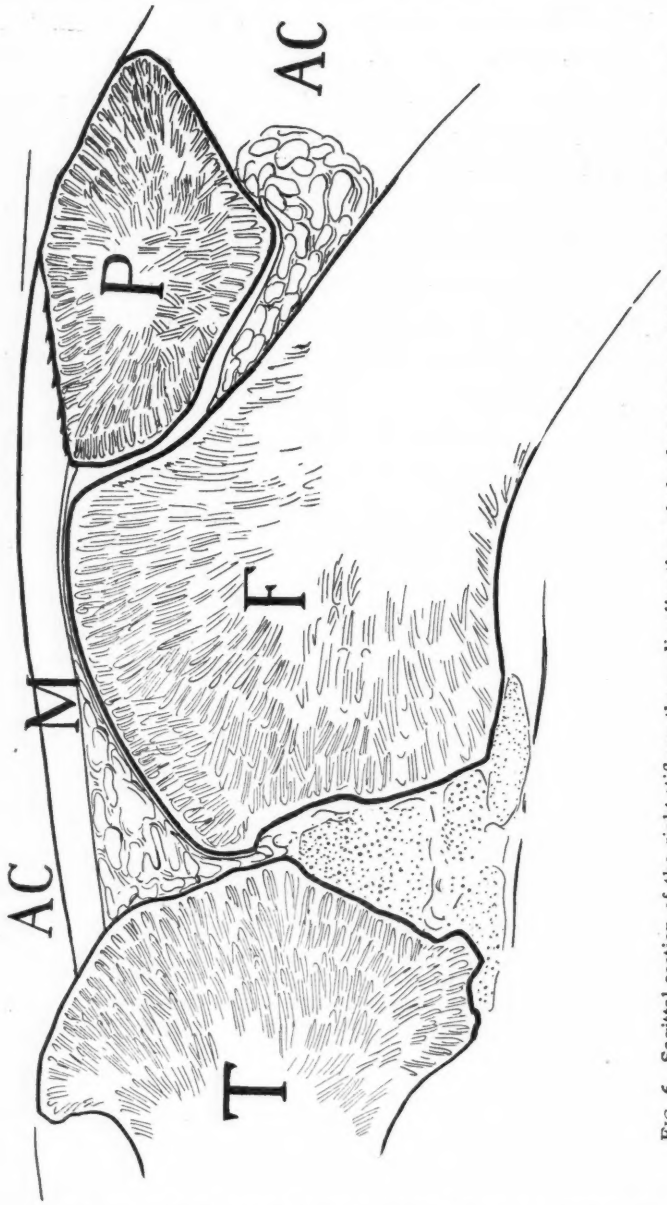


FIG. 6. Sagittal section of the right stifle on the median line through the deepest part of the trochlea of the femur. The lettering is the same as in Fig. 5. Owing to error the dotted line passing from AC to the adipose cushion beneath M at the top of the illustration has been omitted.

The middle ligament, M, is shown riding upon the trochlear surface and drawing upwards on the patella in a manner to release it from its position of alleged dislocation. The patella has been pushed up as high as possible immediately after death of the animal and the adipose cushion upon which it rests is compressed and forced aside.

forward beneath the body and could not be extended backward, as is uniformly the case in the so-called upward luxation.

In reference to digital exploration of the part, there is no agreement between veterinarians. As already noted above, the

findings of different veterinarians will vary according to their prejudices or theory of the causation of the difficulty. We have repeatedly seen cases of this so-called luxation where very eminent colleagues have declared that they could clearly feel the patella dislocated upward out of its normal position, but we have examined the same animal at the same time and according to our interpretation it was resting normally in the trochlea of the femur. Another veterinarian, like Percivall, believing in the lateral dislocation of the patella as the cause of these symptoms, would be just as confident that he felt the patella dislocated outward. In fact, we recall one instance which might well illustrate this uncertainty, in which an eminent veterinarian diagnosed a lateral displacement of the patella in a horse in which the movements were perfectly normal, but where there existed an enlargement upon its external border which was very prominent. This prominence alone, in spite of the contradictions afforded by normal physiologic movement, served to completely mislead this eminent veterinarian, who later admitted his error when his attention was called to the fact that the patella was clearly in its correct position and properly performing its functions, but bore upon its surface a very prominent enlargement which he had mistaken for the basic bone itself. It is evident, therefore, that the digital exploration of the part does not generally lead to an agreement as to the state of affairs.

Post-mortem investigations in regard to this alleged dislocation are alike unsatisfactory. No one has ever found and recorded this upward dislocation of the patella upon post-mortem examination. Each party to the controversy would give an explanation which would be satisfactory to himself. Those who believe that it is a dislocation or hooking fast would claim that the luxation had disappeared during the death struggle, while those who disbelieved in the alleged luxation would hold that the patella had simply remained in its normal position as it was before death.

Another important consideration in reference to this so-called

luxation, is the fact that similar symptoms occur in the anterior limb where we have no bone or other structure corresponding anatomically to the patella and its ligaments. In one case we have observed in a two-year old colt closely analogous symptoms to the so-called dislocation of the patella, in the anterior limb. The colt was found by us, standing quietly, and causing him to move, the anterior limb was dragged along the ground, perfectly rigid from shoulder to toe, and apparently incapable of being bent at any point. After being forced to move for some distance, the rigidity abated somewhat, and by continued urging he finally began to use the limb in a normal manner. Allowed to stand for a moment, the symptoms quickly returned as before, only to disappear again after a forced movement under the whip. After repeated trials of short duration he was finally given liberal exercise, first at a walk and then at a trot, until he was thoroughly warmed up, when all symptoms disappeared completely and permanently. The symptoms, history, course and termination in this case was apparently identical with the so-called patellar luxation.

The conditions surrounding the origin of the difficulty are such as to deny the alleged luxation. Luxation should occur chiefly as a result of some violence, either of a blow or a strain, of over-extension or flexion, but in this case the difficulty invariably occurs spontaneously and in the standing animal only. Some authors have spoken in a general way of its resulting from violence, but have submitted no intelligible record of such cases. So far as we have seen from our personal experience or the recorded observations of others the difficulty appears when the animal is standing motionless, usually in the stall. We find an animal with the so-called dislocation, standing quietly in the stable, without any appearance of discomfort or disease and only discover any defect when we require it to move. If we force the patient to move suddenly, or otherwise produce great agitation, we find that the symptoms disappear and the animal moves wholly normal, or if we believe thoroughly in the luxation theory, and we go through any prescribed method for

replacing the patella, such as extending the limb forward by means of a sideline and then pressing the patella outward or inward, or upward or downward, according to the view of the practitioner, the symptoms likewise disappear, or we get the same result if we cast the animal and bring about an alleged reposition by any method which we like, or if the animal falls and then gets up again, we find that the symptoms have disappeared and the horse moves normally so long as we keep him going. If we halt him for a moment, before we have thoroughly warmed him up, the alleged dislocation probably recurs immediately and we must again go through the form of replacing the patella. This certainly seems unlike a dislocation or hooking fast of the patella. If the allegation were true, the displacement should occur sometimes when the animal is down and especially when accidentally cast, but this is not in accord with clinical experience. If the allegation were true, we should also meet with the accident during progression, especially in an animal which has suffered from the alleged luxation recently, either for a long period of time or several times at intervals. We ought to observe the "luxation" on the road and especially in the severe extension of the joint in heavy draft or upon the race track, to the greatest degree perhaps, in hurdle races or hunting, but it is never seen under these trials.

The results of treatment, as bearing upon the nature of the malady are highly conflicting. All cases of so-called upward luxation eventually recover under any form of treatment or under none. One group of practitioners extend the affected limb beneath the body and retain it there by means of a sideline and ultimately they get recovery, although the process to which they resort is in direct conflict with their theory of the cause. If it is a hooking fast of the patella over the internal condyle, they simply favor this condition by placing the limb in that attitude where a recurrence of the luxation would be invited. Another group of practitioners resort to the "stifle shoe" by which means they force the animal to maintain the articulation in a state of flexion. This is the most rational treatment in case the

theory of luxation is correct. A third group of practitioners rely upon the division of the internal patellar ligament and claim to cure all the cases upon which they operate which, of course, we accept as correct in so far as the ultimate recovery of the animal is concerned, because as we have already stated they are all eventually restored to health. It is not clear how the division of this ligament can bring about a permanent recovery even if the theory of its adherents be correct. The ligament is eventually re-united and the friends of the operation allege that it is thereby elongated. If this be the case, then it seems to us that the operation would invite a recurrence of the affection as soon as healing had occurred, because the elongation of this ligament would allow the patella to be carried still further upward. A fourth plan is recorded by Ryder (AMERICAN VETERINARY REVIEW, Vol. VIII, p. 446) in which Liautard, apparently for this same trouble, divided the long vastus muscle, which was ultimately followed by recovery. A fifth group of practitioners, who do not believe in the existence of a luxation or hooking fast of the ligament, apply another line of treatment which consists essentially of forced movements of the animal or of massage of the region or of some constitutional remedy which may tend to overcome some physiological disturbance in the action of the muscles in the region. A large proportion of this group of practitioners take a keen whip and startle the animal suddenly into moving or by any other means, which would give the animal a sudden start, obtain relief from the difficulty. Others, like the late Professor Williams of Edinburgh, administer a purgative to overcome the difficulty. Percivall, calling it lateral luxation, cured it with a purgative, if mechanical replacement failed. Like the other groups of practitioners, their results are satisfactory and eventually they obtain recovery in every case. These conflicting experiences in handling the affection do not set the question of its nature at rest, but it seems to us that the clinical facts support our contention that it is not a dislocation.

Another strong argument against the luxation theory is the

after effects of the disease. In one case we will see an animal which has suffered for a few hours only, in another it has recurred daily for weeks or even months, and yet in other cases the malady has been constantly present for a long period, and the animal has stood as if riveted to the floor for weeks together, and yet in none of these cases do we ever find any inflammation or lameness, or disease of any kind persisting in the part which can be referred to the malady itself. It seems to us impossible that such a dislocation or hooking fast could take place repeatedly or exist for a long time without causing some sort of pathologic change in some part of the apparatus, but this never occurs. In applying the "whip" treatment the movements of the animal are quite violent, and if the ligaments were caught over the condyle it would seem impossible to avoid severely straining or even rupturing them during the violent exertions which the animal is forced to make, and yet no such result has been recorded so far as we can find.

It seems to us, therefore, that the majority of the evidence is overwhelmingly against the theory of luxation, no difference from what point of view we examine it. Such a conclusion leaves the question as to the nature of the malady unanswered. Most of that group of veterinarians, who disbelieve in the theory of luxation, ascribe the malady to a cramp of the muscles extending from the femur to the patella, especially of the vasti group of muscles. This seems to us very doubtful because such a cramp of this group should produce the same effect as our experiment of bolting the patella to the femur. It seems to us more probable that the affection is due to a chronic cramp of the long vastus and other muscles of that region which pass forward and downward from the region of the ischium to become attached to the patella, either upon the outside or inside, directly to the bone or indirectly to its ligaments. When these act upon the patella of the standing animal they serve to fix the stifle joint, and when the patient is in motion they would, in a state of cramp, draw the limb backward and keep it in a rigidly extended condition.

Under these conditions and holding such belief we naturally prefer the "whip" method of handling the disease accompanied by such other care as may tend to invigorate the constitution, and especially insisting upon regular, vigorous exercise. This treatment has the advantage of simplicity and promptness and is equal to the others in the ultimate result since all cases recover. It has a distinct advantage in practice which might be illustrated by a case occurring recently. Two young veterinarians, imbued with a firm belief in the luxation theory, were trying to establish a practice. They were called to a stable of valuable animals, the patronage of which they greatly desired, to see one suffering from this disease. They prescribed slings with the foot to be held forward in extension for a period of two weeks or more and the application of a blister over the stifle. The manager of the stable did not like to take the horse out of work for so long a period, and consequently called in a self-educated veterinarian, who prescribed the "whip" treatment and returned the animal at once to his regular work with complete satisfaction. We repeatedly see other cases in actual practice where the conditions are very similar.

ANSWER TO CORRESPONDENT.—*Andrew Frey, V. S., Attica, Ohio:* The new castrating instrument described on page 1140 of January REVIEW is manufactured and sold by the instrument house of H. Hauptner, Berlin, Germany; none have, to our knowledge, been imported into this country.—(Editor REVIEW.)

AUTO DELIVERIES.—The Scott Dry Goods Co., of Cleveland, Ohio, has published the following notice to the public: "Our deliveries since June first have not been up to the Scott standard. Owing to the steady increase in trade, we changed our delivery system from horses to autos, thinking thereby we would give our patrons better service, but after a few months' trial we were compelled to change back to horses and add more wagons, in order to take better care of our increasing business. We regret our efforts to better the service have not been satisfactory and beg to assure our patrons we are in a position not only to deliver goods promptly but to again promise the best delivery system in the city. In a short time wagons with our name and trade mark will again be familiar sights on our city streets."

THE AMERICAN VETERINARY INSPECTOR AND HIS FRENCH CRITICS.

A REPLY TO PROFESSORS LECLAINCHÉ AND LIAUTARD.

By D. Arthur Hughes, Ph.D., D. V. M. (Cornell).

Inspector Subsistence Dept., U. S. Army.

If there is any nation to which the whole of the English speaking peoples owe obligation for a revelation of the extent of the field of veterinary science, that nation is France. Just as in art, letters and diplomacy French manners and polish have influenced us; so also in the field of applied science we owe much to French investigators and French teachers. It was the equerry of Louis XVI. who laid the foundation of the Royal College of Veterinary Surgeons, London; it was a Frenchman, none other than Dr. Liautard himself, who founded the first veterinary college in the United States. We make, therefore, our devoir to France, freely acknowledging what we owe to her. Strangely enough, however, the criticisms of Professors Leclainché and Liautard of the American method of choosing its veterinary inspectors is, in reality, a criticism of a man equally cognizant of French methods and American conditions and needs, a man who had studied at Alfort, who was honored by Frenchmen with membership in its scientific societies, and who instituted in America the method criticised, never changing it during twenty years—none other than Dr. D. E. Salmon himself.

Dr. S. Bennett, Chief of the Inspection Service in Chicago, in the midst of the criticisms of the abattoirs established in that city, expressed the opinion that there was no part of the work that had not been probed by somebody. Still the end is not yet, for, just as the reform is becoming definitely effective, come along French scientists to criticise the method wherewith we choose inspectors. That certain changes probably would be made in the method was not unforeseen by us, as I pointed out in my article, "Prominent Veterinary Problems of To-day,"

printed in the REVIEW, January, 1906. No one, therefore, will accuse me, in replying to Drs. Leclainché and Liautard, of attempting to block the wheels of veterinary progress.

Things are never quite so bad, nor quite so good, as critics are apt to make them out. The opinions of Professors Leclainché and Liautard are based on a misapprehension of the method of choosing inspectors in America. The bituminous, Gallic imagination, excited by the fictitious pages of "The Jungle," is in no condition to consider anything judiciously. When Professor Leclainché turned to the cold printed paragraph in the U. S. Civil Service Manual, giving a short statement of the requirements for the government inspectorship, it must have seemed very poor indeed. Though, of course, I cannot in any sense make an official reply to our critics in France, I can with censure probably personally draw attention to certain points which explain the routine adopted, and so far always carried out, in the choice of American Veterinary Inspectors. Perhaps, when we have gone over briefly the method wherewith Inspectors are chosen, adding much that cannot be found except here and there in the Civil Service documents, vouchers, the law, rulings on the law, Dr. Liautard will not feel so sad and disappointed in the methods of the American Government, nor will he think we are placed in "the disgraceful condition" when compared with those of Europe, "at least so far as the requirements for the position are concerned."

What I will endeavor to do will be to justify American methods in the light of American conditions. In doing so I will ask: What is the American method; how can it be justified; what changes can properly be made in the subjects of the examinations, and the circumstances which will bring the changes about.

Veterinary Inspectors of the Bureau of Animal Industry, Department of Agriculture, belong to the U. S. classified executive Civil Service list, which, in its totality, embraces 275,000 persons with salaries aggregating $175,000,000 per annum. As the choice of veterinary inspectors is made under a national

law operative, under the U. S. Civil Service Commission's rulings, in the many kinds of candidature for the multitude of positions obtainable, the general method of choosing veterinary inspectors must conform to that for similar professional positions under the Civil Service law. Almost without exception persons are chosen for such professional office on the basis of abundant sworn statements as to his mental, moral and physical fitness shown in vouchers and a competitive written examination, which tests his professional knowledge.

The six-page, foolscap size, voucher or form to be filled in under oath by applicants for professional, scientific and technical positions gives the commission complete knowledge of the education and experience of the applicant, his general and technical training and degrees, physical abilities or disabilities, good citizenship—all in closest detail, in which he is supported by numerous questions answered by two reputable American citizens, the whole document being sworn to before a notary under his official seal.

The examination, *before entrance to the Veterinary Service*, is confined to a *written* test for several very good reasons: first, the examinations must be held simultaneously in every state of the Union to give every possible candidate an equal chance in the competition; second, the distances, geographically, in America, are so great, that it would be unfair to require candidates to travel far to take examinations of any other kind; third, it has been found that a written examination tests equally well a veterinarian for the veterinary service, a human medical doctor for the Public Health service, or a civil engineer for the National Surveys. As required by the Civil Service law, the examiners are professional men, leaders in the professional branch of the service at Washington. The names of the writers of the competitive papers are not known to the examiners. The papers are therefore marked with strict conscientiousness and impartiality by the examiners, and their findings are afterwards reviewed by a new set of examiners, before the final announcement of standing is made.

Turning now to Dr. Liautard's proposed changes to be made in the American method, we find that he desires that the examination should be confined to sanitary science and sanitary police, sanitary pathology and medicine, meat inspection, microscopy and microbiology, in which the competitor must have advanced knowledge. If Dr. Liautard had seen sets of questions set during the last five years by the commission, he would know that they range over all these subjects in the most practical manner. In addition they embody questions on the U. S. Meat Inspection laws and regulations, differential diagnosis of contagions, the quarantine rules against Texas fever, sheep and cattle scabies and diseases to be watched for in the quarantine on the seaboard. How, else, could the American inspectors have stamped out bovine pleuro-pneumonia and foot-and-mouth disease if they had not been required to pass in sanitary science and police?

The French have one way of testing the practical value of a candidate. We have another. I submit to Dr. Liautard whether or not our method is not better than that employed in France. Under the U. S. Civil Service law a man is not received as an absolute, permanent appointee until he has been passed through a six months' probation. Under the law a strict watch must be kept of the man to discover his practicality and general fitness during the first six months. At the end of that time, if he is inefficient, he is dropped summarily. Two things must be noted in the work of the temporary appointees: whether their work falsifies the statements made in the vouchers sent to Washington before the written examination was taken; whether they have actual knowledge of diseases in food-producing animals and ability to detect them. The temporary appointee is not sent to work alone, always in company with a permanent appointee. He is transferred from one kind of inspection to another every month, watched by the assistant chiefs and chiefs who make the round of the abattoirs at unknown times daily. The value or uselessness of the man being known, reports are made on him in secret correspondence to Washington. Report

is made of the quality, quantity of the man's work, his efficiency, deportment, punctuality and worthiness for work of a higher intellectual character. Strictly the American tests of a veterinarian for the public service are: a voucher beforehand which gives certification of his whole training; a written test of professional information; a practical test during the period of probation. The actual, practical test of a man for six months, whose antecedents, academic training and written examination are sufficient, is better than the bothersome, excitable test for an hour or two at a cattle market, as is French or Italian fashion.

How, now, can the American method be justified? First of all, by the necessity of the case. When Dr. Liautard quoted Sect. 208 of the U. S. Civil Service Manual, he neglected to add the printed line, "the supply of eligibles for this position (veterinary inspector) has never been equal to the demand." That sentence, properly understood, explains the whole situation of affairs. Why has the number of eligibles been unequal to the demand? First, because of the small number of graduates annually, from our veterinary colleges. They are perhaps not more than 750 a year, contrasted with the many thousands graduating yearly in human medicine. Second, because of the strong attraction of other fields of professional labor and the greater remuneration. The number of candidates for the American government service has always been few. This is aggravated at present by the enormous increase in the demand for men. Dr. Liautard asks the question, if there were added requirements for the position, would it be impossible to find candidates, would the change be so difficult to realize? He answers the question in the negative. In another place he quotes Professor Leclainché as saying that 150 new inspectors have been added to the American veterinary service. Probably both Professors Leclainché and Liautard labor under a misapprehension of the difficulties under which the Bureau of Animal Industry is so admirably working, while both of the French critics are in error in their view of the numerical in-

crease in the inspection force. George W. McCabe, the solicitor for the Department of Agriculture, in an address before the New York State Breeder's Association, Syracuse, N. Y., Dec. 18, 1906, states that under the old law there were 324 veterinary inspectors, while now there are 531. The number of establishments now under inspection is 632 and the number is increasing daily. The total number of employees engaged in the Meat Inspection on Dec. 1, 1906, exclusive of clerks necessary for the recording of correspondence, was 1,965. The force is made up of veterinary inspectors, stock examiners who are principally engaged in the ante-mortem inspection of animals, taggers who label the carcasses and meat food products, and meat inspectors, not to be confused with veterinary inspectors, who test meats to see if they are tainted, and look after their cleanly handling.

According to the *Arrêté* concerning the organization of the veterinary sanitary inspection service of Paris and the Department of the Seine, published January, 1905, the total number of French government veterinarians for Paris and its environs was hardly more than 68, with 24 *surveillants*. It is easy to see how so few veterinarians as Paris, the largest city of France, needs for its veterinary service can be easily supplied from large and influential national veterinary schools like Alfort, Lyons or Toulouse, as required by the French law. But when it comes to the need, as in America, of large quantities of graduate veterinarians to enforce a national meat inspection law which has so recently come into being, surely the French critics can see the difficulties under which the Bureau of Animal Industry is laboring.

There is no doubt about it, whatever Dr. Liautard's opinion may be, that the American government, because of the economic law of supply and demand, has difficulty in getting sufficient candidates of the right stamp to conduct its inspection. A story of U. S. Civil Service Manuals shows that out of 200 candidates the average is that about 70 pass. The perplexities of the Chiefs of the Bureau of Animal Industry are enough for the

moment, without adding the greatly increased difficulty of obtaining inspectors.

The principles of veterinary medicine, the scientific knowledge to be obtained and applied, are the same for France as for America, but the French method for choosing inspectors will not do for America at present. There is a constitutional reason for this. The analogue of Parisian inspection, and the choice of inspectors for such cities as Paris (the kind referred to by Dr. Liautard) is that of the European *municipal* inspection. We have nothing of municipal inspection in America in the Parisian sense of the word. When compared with the municipal inspection in Paris our cities in America are in a ridiculous plight, disgraceful in the extreme, as I shall show later in a paper to be written for the REVIEW. But, as far as prerogatives can be given federal inspectors under constitutional limitations, the work is done well, and inspectors are rightly chosen. The method of choice of inspectors which is thrust before us as a model we should follow is the method followed by the municipality of Paris and similar European municipalities. The cities of America could pattern after Paris and require written, oral and practical examinations for candidates. But the federal authorities, in choosing men to inspect food animals and meats going into interstate and export trade, must, for the reasons I have given, adopt a different method to choose inspectors, a method which could justly and equitably be carried out alike in San Francisco, the centre of the American continent, or at a point in distant Maine, and that method could only be a *written* test.

Furthermore, the American method of choosing inspectors is justified by its success. If the American veterinary inspectors had conspicuously failed on any one of the important occasions when their scientific knowledge or judgment was needed in the prevention or suppression of contagious diseases among animals; if they had not exercised their prerogatives fully and completely under the limited power allowed them under the meat inspection law of 1891; if they did not prove themselves

equal to the task imposed on them under the federal law of June 30, 1906; if, in short, their work, as shown practically in the abattoirs, on the quarantine lines, and in emergency when dreadful animal scourges devastated the country, had been a failure, there would be abundant reason for opprobrium. Professor Leclainché, perhaps boiling with anger at the vexatious imagining of Upton Sinclair, and not knowing the falsity of that vapid writer's statements about the U. S. Government Inspectors, was in no frame of mind to have his attention drawn to the following facts: First, the inspectors, up to June 30, 1906, in the abattoirs, performed to the letter everything the old law of 1891 allowed them to do; Second, the same inspectors, their prerogatives increased covering ante-mortem and post-mortem inspection, sanitation in the abattoirs and adjoining yards, supervision of all food-making processes, standardizing of products chemically, microscopic work for determination of exact pathologic conditions in doubtful cases—in all is giving complete and universal satisfaction to the millions of American people and we feel sure will shortly inspire the confidence of all countries with whom these United States of America deal.

What changes, we may now ask, may be made in the subjects of the examinations and the circumstances which will bring the changes about? Sifted to the bottom it will be found that the main difficulty in drawing candidates in sufficient numbers to try competitive examinations for the position of Veterinary Inspector, and to retain men of their own volition when once obtained, is the fact that the remuneration offered at the start is believed to be insufficient, and that the increase in pay, for length of service and efficiency, is not thought to be enough to inspire the men to remain in the Service for a lifetime. America is a nation of great financial opportunities, especially for the well-trained veterinarian. Of late the lower grade men in the service of the Bureau of Animal Industry, stock examiners and taggers, who are the assistants of the veterinary inspectors, have had their ratage of pay materially increased, the ratage to vary with efficiency and length of service. Should the finan-

cial ratage of veterinarians in the Government service be likewise changed to make the office financially attractive, the number of candidates for the office would be greatly increased. This is the solution of the problem. Under these circumstances examinations for entrance to the service, as well as examinations for promotion with increase of pay, could be made as difficult as desired.

With attractive remuneration and the multiplication of candidates what change would occur in examinations for entrance to the service? The need for an examination in such rudimentary subjects as arithmetic would be swept away in an instant. The veterinary colleges would be compelled to require a good secondary education before men could enter their doors, else their graduates would not be allowed to try Government examinations by the U. S. Civil Service Commission. Instead of seven hours being allotted the rudimentary and technical examinations, as at present, the whole seven hours would be given up to the scientific papers. They would be made far more searching and would be similar in scope, though directed to a test of *specialized knowledge in veterinary subjects*, to the seven hour human medical examination for the position of Acting Assistant Surgeon in the U. S. Public Health and Marine Hospital Service or that of Hospital Interne for the Isthmian Canal Service. (Sects. 40 and 122, Civil Service Manual, July 1, 1906.)

Far be it from me to hinder by a hair's breadth the Titanic energies of such men as Dr. Liautard, who are devoted to veterinary progress, in their efforts for reform. The end we seek is the same—higher standards for entrance to the American Veterinary Service, better trained men in the Public Service. Though I cannot but feel that Dr. Liautard misapprehends American conditions if he thinks we can take over bodily French and Italian methods for the choice of men for the federal service, in essence we agree. Our ideals are the same: we differ only in their application. Let us by all means adopt, in so far as we may, European standards, but let us adapt them to American conditions.

THERMIC FEVER.

By C. G. Glendenning, Clinton, Ill.

Read before the Illinois State Veterinary Medical Association, July 12, 1906.

In writing on this subject, it will not be my purpose to take up in detail the physiological changes which take place in the animal structure during the many acute and chronic affections produced by exposure to extreme heat. If possible, I want to arrive at the most practical method for the practitioner to use in handling this disease.

The complex animal organism, which is controlled by the more complex nervous system, when exposed to extreme heat and forced to extreme exertion has given rise to many varied symptoms and conditions. This has caused the profession to be long in coming to a definite and correct course of treatment. The many conditions in the horse the practitioner is called upon to prescribe for during the damp sultry days is often puzzling, and it is hard to decide on the most effective treatment. While this is one of the oldest known diseases, its varied symptoms have given rise to a great variety of names. But whether we call it heat exhaustion, sunstroke, isolation, thermic fever, etc., the immediate cause of all these conditions is exposure to extreme heat in some way. Therefore, in this paper I will consider all conditions due to exposure to excessive heat by the term thermic fever. But the treatment will necessarily be varied to suit conditions, and individual cases.

At one time it was thought that exposure to the direct rays of the sun was the chief cause. It has been demonstrated in human practice that such exposure is in no sense necessary, and complete darkness is no protection. Many cases occur while people are at work in buildings, and while marching at night. If our patients were forced to violent exertion while in some of our poorly ventilated stables, they would suffer with thermic fever as do the human. I remember one case in a horse to which I was called that occurred while driving during the night.

It presented the same conditions as those affected while working in the heat of the sunlight. Therefore we believe that thermic fever is due to exposure to excessive heat. Yet, there are certain conditions which act as predisposing causes by lessening the power of the system to resist heat, viz. :—High stimulating diet, irregular exercise, a lack of an abundance of pure drinking water, overwork, causing excessive bodily fatigue, any derangement of the digestive system, and certain climatic conditions, such as a moist sultry atmosphere, etc.

Symptoms.—The attack may be very sudden or it may be preceded by well-defined signs. Even in the most acute cases the driver, if a close observer of his team, will note changes in the action and appearance of the animal that should warn him to seek the shelter of shade and rest. This would possibly prevent the more acute symptoms. The preliminary signs are the perspiration ceasing; the skin becoming hot and dry; accompanied with short anxious breathing. The animal may become slightly sluggish, which is soon followed by an apparent burst of energy, going ahead for a while at more than its usual gait, causing the driver to believe it is feeling better than usual. This, however, is only the painful blinding headache, which is soon followed by dizziness, staggering, and falling in a delirious semi-paralyzed condition, which often rapidly approaches complete coma. The pupil of the eye is usually contracted; the mouth is hot and dry; thirst is intense; bodily temperature ranging from 106 to 112° F., or it may be below normal, as low as 97 or 98° F. In most cases more or less gastro-intestinal derangement exists. In some cases there will be extreme motor relaxation, while in others there is a rigid tetanic convulsive muscular condition present. This rigidity of the muscles may set in while the animal is still on its feet, and the jaws become as firmly set as in any case of tetanus. The pulse is usually rapid, weak and intermittent, but I have seen cases with a slow full pulse, and others with a strong irritable pulse. These varied conditions have often tried the most ingenious of us to apply the suitable remedy.

From what I can read on this subject, and from my own observation, I have come to the following conclusion: That with a slow full pulse the cerebrum is the special seat of the congestion. The strong irritable pulse would indicate inflammation of the meninges or other vital parts. The low bodily temperature and depression of the vasomotor system would result from paralysis of the vasomotor centre. The extreme high temperature is due to paralysis of the inhibitory heat centre. The great muscular relaxation is possibly due to paralysis of the motor centres. The rigidity of the muscles is possibly due to the slight congestion of the motor centres, or perhaps due to formation of myosin, as muscle plasma coagulates immediately at 115° F., but when muscle is in great activity it coagulates at a much lower degree.

The Setschenow theory regarding the great difference in the bodily temperature is:—

That in the pons there is a centre whose function it is to inhibit the production of animal heat; and that in the medulla there is a centre (probably the vasomotor centre) which regulates the dispensation of bodily heat; and that fever is due to disturbance of these centres. Let an animal be placed in an atmosphere where it is unable to get rid of the heat, its body is foaming and they may suffer with a gradual thermic fever.

In this condition the inhibitory heat centre may become exhausted by the effort which it has been making to control the formation of heat, or become paralyzed by the direct action of the heat. Then, suddenly, all tissue will rapidly begin to form heat. The temperature will rise with a bound and the animal fall with an acute attack of thermic fever.

If this theory be true with the inhibitory centre, it is likely true with the distributing centre, causing collapse or a great depression of the vasomotor system, and rapid fall in bodily temperature.

In ordinary cases death results from asphyxia, or a gradual failure of both cardiac and respiratory action, largely due to paralysis of nerve centres. In the more sudden cases death

results by cardiac arrest, caused by coagulation of the heart myosin, causing immediate post-mortem rigidity.

Post-mortem.—The rigidity of the muscular system and heart; deterioration of blood due to excessive tissue change, the blood being dark and watery; abnormal engorgement of the veins and pulmonary arteries; and the rapid decomposition of the tissue.

After-Effects of Thermic Fever.—The mildest form of this affection leaves the animal more or less unable to stand heat. The cause of this must be chronic meningitis or some change in the heat controlling centres. This greatly depreciates the value of the animal.

Treatment.—There being two or more distinct conditions of the animal body which are produced by exposure to extreme heat, they have certain similarity in their symptoms, yet they are widely different in their pathology and they require directly opposite methods of treatment. In all cases the treatment must be prompt and energetically carried out; delay in applying proper remedies allows this disease to pass beyond a restorable condition. The bodily temperature must be lowered as soon as possible. In our patients that we find down in the field or on the street, it requires considerable time before they can be moved; cold baths should be applied to the body immediately and kept up continually until the fever drops below 103° F. This can be done with a sponge and bucket of cold water; or, if a spray is at hand, give a shower bath, occasionally turning the animal over. It is very important to shade it from the rays of the sun, and give plenty of fresh air. Moisten the mouth with cold water, and if it will drink, give it a few swallows every few minutes. Where the heart is weak, give stimulants; whiskey in two to four ounce doses every fifteen or thirty minutes, as case demands. Nux, digitalis or ammonia may be used. Antipyrine is recommended to be given hypodermically to lower the fever. I have never used it, as I depend largely on the cold baths. In cases where the pulse is slow and full or strong and irritable I have received good results from bleeding,

followed by stimulants and acetanilid. However, great care must be taken not to reduce so much as to cause after collapse, and with a weak pulse never give sedatives or take blood.

In cases where there is great depression of the vasomotor system, the bodily temperature below normal, possibly the body covered with a cold sweat, heat should be applied. Blankets rung out of hot water applied to the body as vigorous as the case demands; give alcoholic stimulants; digitalis, uux, or belladonna. But in these cases the alcoholic stimulants must not be given too freely, as they, in large quantities, tend to increase vasomotor depression. Atropine, given hypodermically, is probably the quickest and best vasomotor stimulant. It causes rise in temperature by preventing waste of bodily heat.

When the delirium is passed and the animal regains consciousness and is able to stand, keep it quiet and cool; nourish properly and allow nature to restore a normal condition. If there is drowsiness or excitability continuing, it indicates meningitis or some cerebral disturbance, and should have the treatment usually prescribed for such conditions.

THE CHAMPION COW OF NEW YORK STATE was recently sold to a Maine breeder for $8,000.

IN renewing his subscription to the REVIEW, Dr. S. G. Hendron, Arlington, N. J., says: "I feel that my last three dollars have returned me good interest, and am sure that this investment will do equally as well."

THE UNIVERSITY OF URUGUAY is about to establish a veterinary faculty and a well-equipped veterinary school. The organization of the staff has been placed in the hands of Professor Peroncito, of Turin, who will occupy the position of director and the chair of parasitology.—(*Veterinary Journal, Jan.*) [This statement is evidently incorrect, as Dr. D. E. Salmon, late Chief of the U. S. Bureau of Animal Industry, is now engaged in the work of organizing the Veterinary School in connection with the University of Montevidio, and it is unlikely that Uruguay will establish two Government veterinary schools simultaneously. It is probable that Prof. Peroncito is organizing a veterinary sanitary police service for Uruguay. Indeed, we have heard that such was the case.—Ed. REVIEW.]

THE EFFECT SOMETIMES PRODUCED BY FEEDING IMMATURE, UNSOUND, AND MOULDY CORN TO EQUINES.

By L. C. Tiffany, V. S., Springfield, Ill.

Presented to the Annual Meeting of the Illinois State Veterinary Medical Association, Dec. 4-5, 1906.

The subject which I have chosen for this occasion is one that will doubtless give rise to much comment, for opinions will be expressed, the correctness of which may be difficult to substantiate, and which have already been declared wrong by some of our fellow practitioners eminent in the profession. It is not expected that anything new to many of our members will be brought out, except perhaps in the discussion which may follow, but many of the younger members of our Association will probably be interested.

The effect usually resulting from feeding unsound and mouldy corn to equines is observed in the centres of the nervous system, the brain principally, but sometimes in the cord as well. The feeding of immature corn is more likely to produce derangement of the digestive system, particularly so if the corn is quite immature and has been exposed to severe frost or freezing.

As instances of this condition are rather infrequent, only one instance of its most remarkable effect will be mentioned.

Several years ago, in the latter part of October, I was summoned to Fayette County to investigate the cause of death among horses on the farm of one Mr. C———. Being in another part of the state at the beginning of the trouble, I did not arrive at the farm until 3 P. M. on Monday, when the following facts and circumstances were related to me by the owner: On the Thursday prior to my visit Mr. C. was possessed of four horses, two of which constituted a team of about 2800 pounds weight, the other two being lighter bred, weighing about 1000 pounds each. The large team was used during Thursday haul-

ing light fire wood from the timber on the farm, and had not been worked hard nor had they been unusually warm. About six o'clock they were unhitched from the wagon, placed in the stable, the harness removed, and with the other two horses turned loose in the barn lot that they might go to the watering trough, where all drank freely. All the horses returned to the barn, entered their stalls, and were tied with halters. The owner then took a feeding basket and went to the corn crib preparatory to feeding their evening meal, but before either animal had received its feed, every one of them began to paw, scringe, and lie down. A neighbor being present immediately ran to the trough and emptied it, believing that the water contained poison. All these animals rapidly grew worse, and by midnight one of the large horses was dead; by daylight the mate was in the same condition, and by Friday afternoon one of the light horses was also dead and the remaining one yet seriously ill. The latter, however, finally recovered, and was seen by me on Monday.

Two local practitioners had been called to these cases and diagnosed poisoning. They held an autopsy on both the large horses, but the owner said they could discover nothing abnormal. The third carcass was left for my examination, but as the weather was quite warm, decomposition had rendered it unfit for such purposes. The owner described the symptoms, in all of which they were identical. Every animal had bloated intensely, with regurgitation of food in most of them, from which I could make no other diagnosis than acute indigestion. The animal which survived presented the appearance of one which had experienced the awful agony of that most painful ailment, being bruised at every angle of the head and body, from rolling on the ground. The remark of the owner convinced me that he believed that the water in the trough contained poison of some kind, but, as usual, the feed was examined and it was found that his corn, not nearly ripe, had been frozen in the field during the latter part of the month preceding (September), and of this corn he was feeding more than twice an

ordinary quantity to make up for loss in quality. The opinion was expressed that the immature corn was the cause of the trouble, although the admission was made that the coincidence was remarkable. My opinion was doubted and rejected by the owner, who said that he was feeding twenty ears at one feed of the same corn to a horse which he had borrowed from his uncle on Saturday. I warned him of the danger and came away. In about a week thereafter I met a veterinarian at a village near-by, who informed me that the uncle's horse died a few days after my visit, with the same symptoms displayed by the others, as told him by Mr. C.

Such cases as this must be extremely rare, and had the corn been fed in moderation the trouble would probably have been obviated, but it might be difficult to state what a moderate feed of such corn would be.

The effect of feeding unsound mouldy corn is often very serious in some parts of this state, in some seasons being a veritable enzoötic or epizoötic—at least, that is my opinion, formed after careful observation of many outbreaks. The effect produced in such cases being meningitis or cerebritis, with softening and breaking down of brain tissue in the latter. There is difficulty in forming a positive diagnosis in these cases, that is, it is difficult to be certain which pathological condition exists, but this seems rather unimportant as affecting any attempt at therapeutical treatment, as they are rapidly fatal in a great per cent. of all cases, and, in fact, our treatment would probably not be varied in the event of either diagnosis.

Symptoms.—As we are now considering the effect produced by error in feeding unsound corn, it would seem immaterial to attempt to differentiate between the symptoms of meningitis and cerebritis, as either may be present. In meningitis delirium is perhaps more marked in the early stage, while coma to a greater or less extent may mark cerebritis, but either or both symptoms may be seen in either condition. Amaurosis in one or both eyes is one of the distinguishing characteristics, in which amaurotic condition the patient, if allowed

freedom, will move in a circle if one eye only is affected. In this condition, with delirium, the affected animal roams about regardless of obstacles, stumbling over or running against anything in its way, often going through barbed wire fence or hedge, falling in ditches, etc.

When in a partially comatose condition the patient may assume very peculiar attitudes, sometimes standing with fore legs crossed, at others with head pressed against some object, as stall, fence or tree. Difficulty in locomotion is usually more apparent in fore limbs than the hind ones. The ears droop, the eyelids partially closed and the lower lip may be pendulous. Often the power of deglutition is partially or completely lost.

As a rule, I believe the body temperature is not much altered. The pulse in meningitis may be hard and rapid, in cerebritis soft and slow and respiration stertorous.

As these diseases advance the patient becomes exhausted by its movements or overcome by the progress of the affliction and falls to the ground, where convulsions may follow, with the head and neck drawn back; or, if the coma is complete, breathing becomes more and more stertorous until complete paralysis and death supervene.

Lesions found on post-mortem.—In meningitis the small bloodvessels are found engorged with redness of their walls and exudation of a red serum into the tissues and upon the involved surfaces, into the ventricles and subarachnoid space. In cerebritis areas of broken-down tissue in one or both hemispheres, an abscess is often discovered containing a yellowish white fluid. In cerebritis the surface of the brain may appear normal, but upon dissection the above-mentioned condition may be observed. In meningitis the cord may also be involved and similar lesions there observed as seen in the brain.

Treatment would seem to be useless except in the very earliest stage, when ability to swallow exists. Theoretically much might be done, but practically all effort is unavailing. A large aloetic purge may be given and abstraction of blood from the jugular would do no harm. If patient should survive sufficiently

long to permit of the action of the physic, stimulants and strychnine would be indicated, but if the patient is so fortunate as to have lived thus long recovery might be spontaneous. Preventive treatment, however, is of the most importance, and that treatment is obvious: *don't feed corn in such condition to horses.*

I am aware that the opinion here expressed that unsound mouldy corn is the cause of the serious enzoötics of cerebral disease in the horse is doubted by eminent pathologists of other states, but from my experience of a number of years, observing many outbreaks and thoroughly investigating all probable causes, am firmly convinced that my opinion is correct. Some eight or ten years ago this winter, in nearly all the counties bordering the Ohio River, there were hundreds and probably thousands of horses destroyed by meningitis or cerebritis, and in every outbreak investigated by me, in every instance, the horses had been fed unsound or mouldy corn. If the condition of the corn is not responsible for these troubles it certainly is a most remarkable coincidence. In all the outbreaks observed since that time, and many have been serious ones, the same conditions were found. All unsound or mouldy corn may possibly not be injurious, but in all cases investigated that kind of corn had been fed. Only a few days ago I had opportunity to investigate a case of cerebritis in the southern part of the state—White County. A stockman had nine head of coming two-year-old colts running with about twenty head of young mules. All went well until he began feeding corn, when the colts began to die. Six of them were lost upon my arrival and an autopsy was held upon one which had died about an hour before. A large abscess was found in the right hemisphere. Fortunately the owner had only begun the use of the corn and he had fed sparingly. The colts drove the mules away from the feeding place, so that the latter were deprived to a great extent and the colts got most of the corn. Not a single mule was affected, which fact should be, at least, negative evidence tending to prove the cause of the trouble to be the corn, which was unsound and mouldy. Much corn that has a good appearance in

the ear, upon being shelled shows a mould upon the cob, and this I have found dangerous when fed to horses. Many feeders knowing the condition of their corn attempt to select the good ears, but many bad ears are liable to be overlooked; such corn, however, seems harmless to cattle and hogs.

THE "NEVERSLIP" CALK COMPANY has organized a $2,000,000 trust and offers to shoe horses at cut rates.

"RHEUMATISM" AND ITS TREATMENT.—Walter concludes his article on rheumatism, in the *Medical Record* for Jan. 19, in saying that the various infections will account for every form of so called "rheumatism" except muscular, and that is an intoxication. This intoxication accompanies or precedes most articular and some nerve infections. The term "rheumatism" is a misnomer, but must be retained for a time, until real facts are appreciated by the profession and laity. Better diagnosis will bring intelligent treatment. Intelligent treatment means the use of combined methods and a thorough working knowledge of the case. This should consist of prophylaxis, better understanding between patient and physician, with attention in the main to social conditions, dietetics, exercise or rest, as indicated, elimination by proper baths, fresh air, the right coöperative mental attitude, and in some cases climate. Autointoxication with faulty elimination is directly responsible for these conditions. That it is necessary for physicians to make a greater study of the toxic effects of leukomains and to lay more on the findings in the urine of the products of indigestion. An examination of the urine is important in every case for these products of metabolism as well as albumin, casts, and sugar. Heredity has no effect except as establishing social conditions followed by the family. The importance of baths and the precedence of hot mud packs over other baths for equalizing the circulation, stimulation of glandular activity, and elimination. The avoidance of a sedentary life and also of great muscular fatigue, the latter being a cause of muscle pains in children and workingmen. Alkaline waters and drugs hold a large place as anti-acids and antiseptics to the intestines, though they are greatly abused. Hot baths must not be given in dilated hearts, high blood pressure, arteriosclerosis, tuberculosis, and great emaciation, though they are indicated in autointoxication without such complications.

MODERN VETERINARY METHODS.*

By Walter J. Taylor, D. V. M., Ithaca, N. Y.

DIFFERENTIAL DIAGNOSIS.

RABIES.

Rabies is an acute infectious disease transmitted from animal to animal or from animal to man by the bite of the rabid individual or by direct inoculation. It is not known to be transmitted in any other way. The dog is the animal most commonly affected. All warm blooded animals are said to be susceptible. It is a serious disease in man, cattle, horses, sheep and swine. The natural tendency of the dog toward biting is explanatory for its greater frequency in the canine species. Nearly if not all cases of rabies in other species are traceable to inoculation through the bite of a rabid dog.

Rabies was described by Aristotle in the fourth century B. C. Cornelius Celsius in the first part of the Christian era seems to have been the first to refer to human rabies and to employ the term "hydrophobia." During the latter part of the eighteenth and the beginning of the nineteenth century the disease extended over Europe and about this time it appeared in America. The first outbreak in this country was reported from Boston in 1768. In 1779 it appeared in Philadelphia and in the state of Maryland. From that time on it has gradually extended over the greater part of the United States and during the last century has caused heavy losses among farm animals in America.

Although rabies has become recognized as a specific infectious disease, its primary etiological factor has not been isolated or found. It is known that it exists in the brain, spinal cord and saliva of the affected animal. Various forms of bacteria and blastomyces have been found in the brain and cord of affected animals by a number of investigators, but their results have not been confirmed by others.

In 1903, Negri, of the University of Pavia, described small bodies or cell inclusions, since called Negri bodies, which he found in the Purkingie cells of the cerebellum and in the large ganglion cells of the Ammon's horn. Negri believed these bodies to be the etiological factor of the disease and classified

*This series of articles was begun in the December Review, the first installment being on "Diagnosis;" that for January treated of "Differential Diagnosis," with "Tuberculosis" as the special subject, while "Glanders" constituted the special subject for the February number.—[Editor.]

them among the protozoa. These bodies appear early in the course of the disease. They occur in varying numbers and attain to a greater size as the disease progresses. They are largest and most numerous at the time of death caused by the disease.

Symptoms.—Rabies is generally divided into two forms, furious and dumb.

Furious Rabies.—In this form the animal becomes irritable, the symptoms appearing gradually. His habits and behavior are changed. He may be more restless and affectionate than usual, seeking to be near master or mistress, fawning, licking the hand or face, apparently seeking sympathy and assistance. Such cases are, however, extremely dangerous, due to a possibility of infection through the virulent saliva.

In most cases dogs first become dull, gloomy, morose, seeking solitude and isolation in out-of-the-way places or retiring under pieces of furniture. But in their retirement they cannot rest, they are uneasy and agitated, they lie down assuming an attitude of repose, but in a few minutes are up walking about "seeking rest, but finding none." At this period dogs may have aberrations of the senses which cause hallucinations. They crouch ready to spring upon an imaginary enemy, they rush forward and snap at the air; they throw themselves, howling and furious, against the wall as though they heard sounds behind it.

When the furious symptoms appear the dog may leave his home and start upon a long chase with no apparent object in view other than to be traveling. He trots at a rapid pace, eyes haggard and tail depressed. He is indifferent to his surroundings. He often flies at and bites persons or animals which he meets, but usually does not notice them if they remain quiet. It is possible that many so-called spontaneous outbreaks of rabies arise in this way. The rabid dog bites some other dog met in the street late at night, then passes on unseen by any human eye. Dogs in this condition may travel many miles and finally drop from exhaustion. After an absence of a day or two he may return to his home exhausted and emaciated, presenting a most forlorn and miserable appearance.

As death approaches the animal becomes more and more exhausted and unable to stand. The expression is that of pain and despair, the eyes being dull and sunken. Paralysis may appear in the jaws, gradually extending over the whole body. He lies flat upon the side, respirations becoming more and

more difficult. There are spasmodic contractions of certain groups of muscles, complete prostration and finally death.

It is interesting to note that bull dogs and hounds are especially subject to this type, while house and pet dogs more often suffer from the dumb form.

Dumb Rabies.—In dumb or paralytic rabies the striking characteristic is the absence of the preliminary furious stage and the disease merges at once into paralysis after the premonitory symptoms. The early symptoms in this form tend to prostration. There is weakness, dullness or stupor; paralysis of the masseters and abundant driveling of saliva. From this the paralysis may extend to a limb. Often a limb is first affected, the paralysis spreading to the trunk, then to the head. The tongue hangs out, flaccid and dry. The buccal mucosa is dark colored, dry and powdery. The eyes are dull, mournful and without expression, the pupils being usually dilated. The prostration is extreme, the patient lies quiet and helpless until relieved by death in from two to four days. Dumb rabies and furious rabies do not always represent two distinct types of the disease. The typical cases are seen in the two extremes of symptoms and there are always gradations between them.

Differential Diagnosis.

The early symptoms of rabies in the dog are of supreme importance in enabling the owner to destroy or seclude the dangerous animal before he has developed the disposition to bite and thus propagate the disease. The first consideration is to ascertain the possibility of the dog having been bitten by another dog which might have been suffering from rabies. Any change in the general habit should be carefully noted. If so a careful consideration of the symptoms already referred to is imperative. Failing in a positive diagnosis, under suspicious symptoms, several specific means of a certain diagnosis are available. Each of these, however, necessitate the destruction of the animal.

Three methods of an accurate diagnosis are now so nearly perfected that results are most gratifying:

1. Animal inoculation.
2. The histological examination of the brain and nervous tissue.
3. The finding of the Negri bodies in the nerve cells.

Animal Inoculation.—This consists in the subdural inoculation of rabbits or guinea-pigs with a suspension of the brain

or spinal cord of the suspected animal. The procedure is simple. The brain of the suspected animal is removed with aseptic precautions as soon as possible after death. A small piece of the brain or spinal cord is placed in a sterile mortar and finely ground with a few cubic centimetres of sterile water or bouillon. This forms the suspension to be injected.

The hands of the operator and all instruments are carefully disinfected. The rabbit is etherized, the hair clipped from between the eyes and ears, and the skin thoroughly washed and disinfected. A longitudinal incision is then made through the skin and subcutaneous tissue which are held back by means of a speculum. A crucial incision is made in the periosteum on one side of the median line, to avoid hæmorrhage from the longitudinal sinus, and the four parts of the periosteum reflected or pushed back. By the aid of a trephine a small button of bone is easily removed, leaving the dura mater exposed. With a hypodermic syringe a drop or more of the rabid brain suspension is injected beneath the dura, the periosteum is replaced, the skin carefully sutured and disinfected, and the animal returned to its cage.

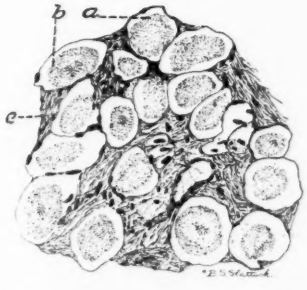
The symptoms following the inoculation are quite uniform. Usually the first indication of the disease is a partial paralysis of one or both hind limbs. This gradually advances until the rabbit is completely prostrated, the only evidence of life being a slight respiratory movement. The period of this complete paralysis varies from a few hours to a few days, but ordinarily it does not exceed twenty-four hours. Although these animals are unable to move voluntarily, there is a reflex action of the limbs until a very short time before death.

Diagnosis by Histological Examination.—The plexiform ganglion situated just outside the cranial cavity near the *foramen lacerum basis cranii*, on the pneumogastric nerve, has been found the most convenient and most desirable for study. The removal of this ganglion is comparatively simple and easy. By taking up the pneumogastric nerve and tracing it anteriorly to a point where it enters the cranium, a slight enlargement will be found, which is the ganglion. Failing in this, by taking up the lingual nerve and tracing it to the point where it enters the cranium in company with the vagus, the plexiform ganglion is easily discernable.

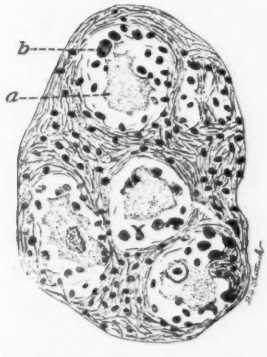
After the ganglion is removed there are a variety of methods which may be used to fix and stain the specimen. The following has been found to be very satisfactory: As soon as the gan-

glion is removed it is placed in Flemming's fluid or in a saturated aqueous solution of mercuric chloride for a few hours, washed in water, carried through the alcohols and sectioned by the paraffin method. With this method of fixation it may be stained with either iron or Delafield's hematoxylin, the latter being the more satisfactory.

Normally this ganglion is composed of a fibrous capsule from which a supporting fibrous tissue extends into the interior, holding in its meshes the nerve cells, each of which is enclosed in an endothelial capsule. The changes characteristic of rabies consist in the atrophy, the invasion and the destruction of the ganglion cells as a result of new formed cells, evidently from the endothelial capsule. These cells appear first between the



Section of a normal plexiform ganglion; (a) and (b) ganglion cells, (c) intercellular substance.



Section of plexiform ganglion from a case of rabies; (a) ganglion cell, (b) cells infiltrating the ganglion cell and space.

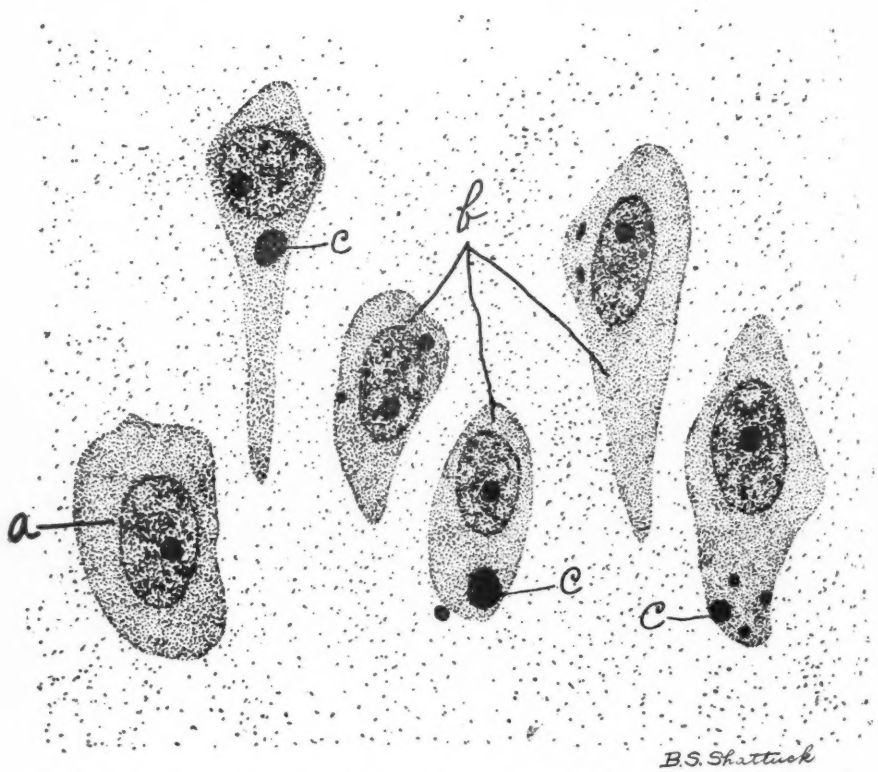
nerve cell and its capsule. These changes are quite uniform through the entire ganglion, and in advanced cases of the disease nearly all of the nerve cells are oftentimes destroyed. The accompanying figures show the difference in the normal and the diseased ganglion cells.

Finding the Negri Bodies.—These are most easily found in the large ganglionic cells of the hippocampus or Ammon's horn of the brain. After the brain is carefully removed it is divided into two halves on a line corresponding to the great longitudinal fissure. This gives ready access to the lateral ventricles of the brain.

The hippocampus or Cornu Ammonis occupies the floor of the anterior part of the lateral ventricles. It is prolonged posteriorly through the reflected portion of the ventricle, the backward curvature of which it exactly follows.

Carefully dissect the hippocampus away from the floor of the ventricle. A transverse section will reveal a thin layer of gray matter folded upon itself somewhat in the shape of an interrogation point. This layer of gray matter is covered on both sides by white matter. With a pair of fine-pointed sharp scissors a little of the gray matter may be cut out and placed on a glass slide. By pressing firmly down upon it with a cover-glass and drawing the cover-glass off the slide at one end, a smear may be made which some workers use altogether in diagnosis. This method has been found very satisfactory where the Negri bodies are present in large numbers. When they are few in number, the paraffin method gives the best results.

The Paraffin Section Method is as follows: A piece of the hippocampus about one centimetre in length is placed in Zenker's fluid. The piece should be allowed to fix for about four hours in an incubator at a temperature of about 40° C. If at



Ganglionic cells found in Ammon's horn of brain from a rabid dog; (a) normal cell, (b) cells showing the presence of (c), Negri bodies. Greatly magnified.

room temperature, 12 to 24 hours are necessary. Wash in running water 6 to 12 hours. Place in 67 per cent. alcohol four hours, 82 per cent. four hours, 95 per cent. four hours, absolute two hours. Clear in cedar wood oil 3 to 4 hours, infiltrate in soft paraffin at 50° C. 2 to 3 hours. (These steps are carried out in an incubator at 50° C. If at room temperature a much longer time is necessary.) The tissue is now embedded in hard paraffin, and cut with the microtome. Sections cut about 8 μ thick give the best results. The sections may now be mounted on slides, treated with albumin fixative, in 67 per cent. alcohol, which dries almost immediately.

Staining.—Smears or sections should be perfectly dry and firmly fixed to the slide. After removing the paraffin from sections by benzine and treating with 95 per cent. alcohol, the slide is immersed in a saturated alcoholic solution of eosin, and allowed to stain 25 to 30 minutes. (Smears may be stained as soon as dry.) They are then washed quickly in tap water, immersed in Loeffler's alkaline methylene blue 60 to 75 seconds, dehydrated in absolute alcohol, cleared in xylene and mounted in balsam. In preparations stained in this manner, the Negri bodies appear as bright red bodies containing one or two circular refractive structures which are surrounded by a number of other small, circular, regular bodies. Inasmuch as these bodies appear very early in the course of the disease, they offer a very ready means of diagnosis in case one has had the misfortune to have become inoculated with the virus of rabies. This method also serves a very efficient purpose in checking an epizoötic because of the early appearance of the Negri bodies. The early sacrifice of a suspected animal, therefore, is not to be considered in clearing up a doubtful diagnosis.

(*To be continued.*)

DR. R. D. SCURFIELD (McK. '01), Crystal City, Manitoba, died of hepatic cirrhosis, Nov. 29.

DR. W. H. DALRYMPLE, of the Louisiana State University and Experiment Station, has suffered a sad bereavement in the death of his venerable mother, which occurred in the city of Durham, England, on January 12, in her ninety-second year. Although she had arrived at extreme old age, she kept up a lengthy weekly correspondence with her only living child, who thus feels his loss more acutely than is usually the case when two are separated by so many miles. She had lived under the reigns of the last two Georges, Victoria and Edward VII.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

EPITHELIOMA CONTAGIOSUM.

By A. T. KINSLEY, M. Sc., D. V. S., Kansas City, Mo.

The following cases of epithelioma contagiosum have been observed in the vicinity of Kansas City in the last two years.

In September, 1904, a mature barred Plymouth Rock rooster, and later 12 six-weeks-old chickens of the same coop were reported to be affected with this disease. These chickens were kept in an enclosure in a suburb of Kansas City. The surroundings were in an excellent sanitary condition, their food and water were of the best quality and wholesome.

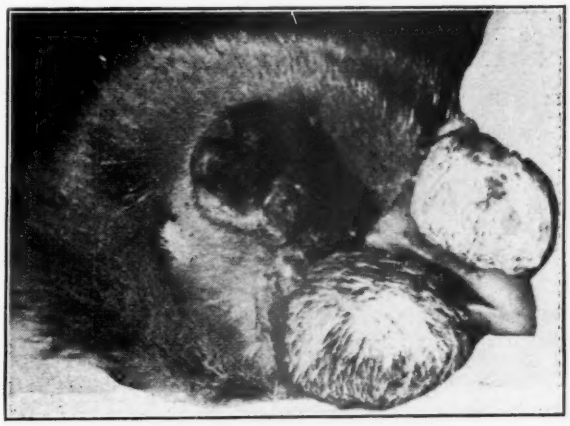
The affected birds assumed a constant sitting posture. Their feathers were ruffled. Their appetite was normal. There was a thin watery discharge from the eyes and nose, becoming muco-purulent as the disease advanced. There was ulceration of the conjunctiva, succeeded by an hyperplasia or by granulation. The hyperplastic or granulation tissue developed rapidly, in some cases becoming as large as a hazel nut in three or four days. The conjunctiva lining the eyelids was most frequently affected and usually caused eversion of the lid. When the corneal conjunctiva was affected the growth invariably invaded the eye, destroying and replacing the aqueous humor, iris, crystalline lens and the vitreous body. In some cases the suborbital fossa contained a mass of muco-purulent material that became caseous as the disease progressed.

Two or three days after the ulceration of the conjunctiva was observed hyperæmic areas appeared in the skin surrounding the eye, which frequently extended to and involved the ears, comb and wattles. The hyperæmic cutaneous areas became hyperplastic, and in four to seven days they became necrotic, which in some cases sloughed, leaving a ragged brownish or grayish indurated surface; in other cases the necrosed tissue accumulated as scaly masses. The hyperplastic or necrotic areas were surrounded by an hyperæmic zone. The above anatomical changes were those most frequently observed, but in some cases the nasal and buccal mucous membranes were involved, resulting in hyperplasia and necrosis, as in the cases in

which the eye only was affected. See Cut I. The rooster and seven of the chickens died of the disease. The other five chickens recovered in about six weeks from the time the disease appeared in the coop.

In November, 1904, the disease was observed in a coop of chickens in Argentine, Kansas. There were 6 or 7 six-weeks-old chickens affected in this coop, the mature birds apparently suffering no inconvenience. Their surroundings and food were conducive to health. The disease affected the eyes and skin only in all the cases in this coop, the condition produced being identical to that described above. All of the affected chickens died.

Cut II represents a six-weeks-old chicken from a coop of chickens affected with this disease. The chickens run at large

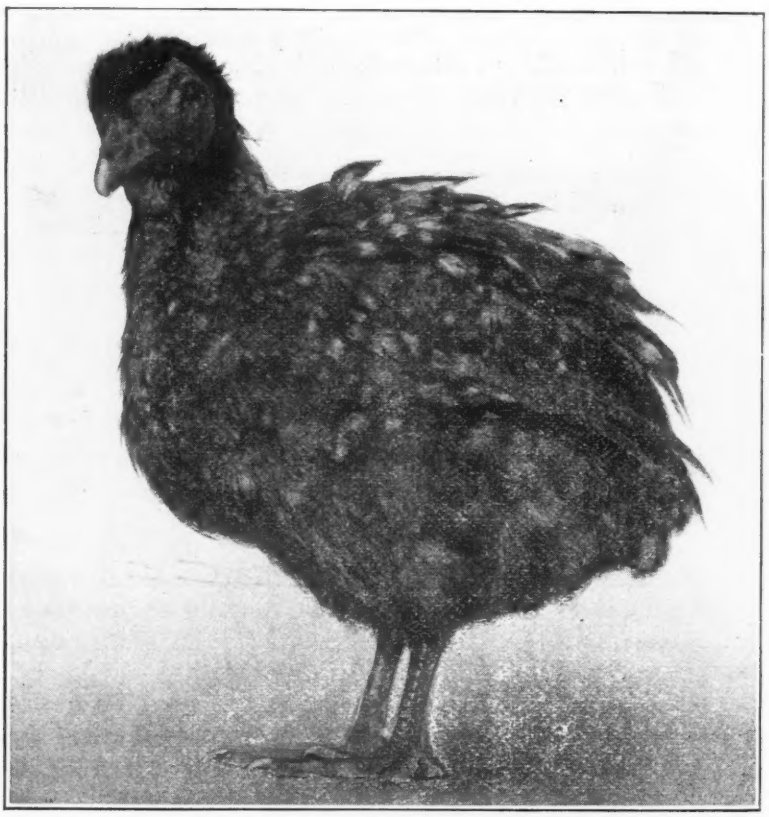


CUT I.—Right side, showing growth from eye, nasal cleft, and mouth.

during the day in a tenement district in Kansas City, and were kept in a filthy make-shift coop at night. Their food consisted of garbage and whatever else they obtained in their daily wanderings. There were 16 six-weeks-old chickens in this lot, eleven of which were diseased. The disease affected the eyes and the surrounding skin primarily, the nasal mucous membrane being only slightly affected in three or four cases. Three of the diseased chickens were so extensively involved that they died in a short time. Two of them lingered along for two weeks and then died. The other six diseased ones were only slightly affected and they made a complete recovery. Those not dis-

eased were placed in clean quarters and fed on wholesome food and escaped the disease entirely.

An outbreak occurred in a coop of 75 Barred Plymouth Rock chickens that were kept in excellent quarters and fed on the best of food. There were 20 affected in all. The symptoms and anatomical changes were the same as described above. The infection involved the eye most frequently. The diseased ones all recovered except two.

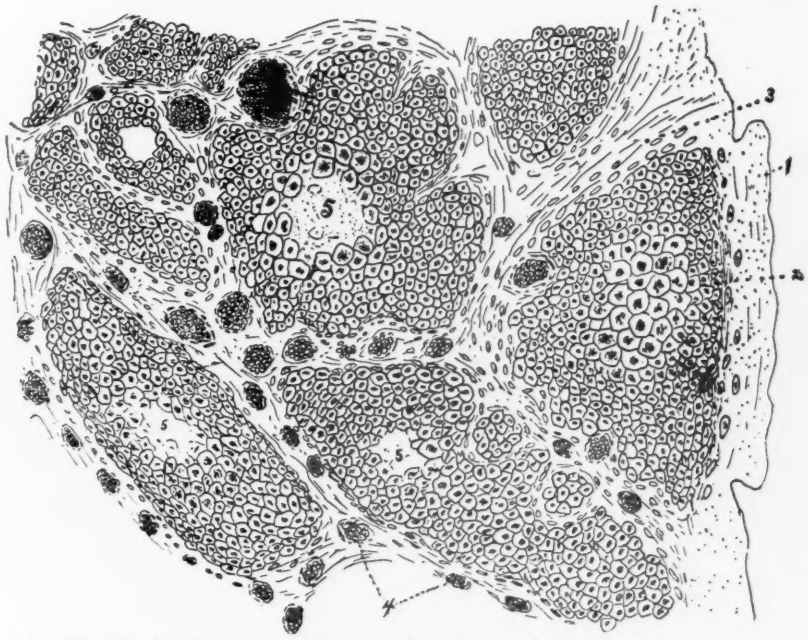


CUT II.—Showing new growth which had completely replaced the left eye and invaded the surrounding tissue. The central portion of the growth had become necrotic, sloughed and left a depression as shown in cut. Ruffled feathers representing general depression.

Another outbreak occurred in a coop of Orphington chickens. The disease affected some of the chickens in the summer of 1905. In November, 1906, twenty chickens of this same coop were affected with the same malady, three of which died. These chickens were kept in clean quarters and fed wholesome food.

The symptoms and gross pathological lesions were the same as those described in the other outbreaks. Cut IV is a pen drawing of a section of one of the skin growths of a six-months-old cockeral from this coop.

Microscopic examinations of the diseased tissue from several cases have been carefully made. The tissues have been fixed in formalin and alcohol and embedded in collodion. Various stains have been used in staining the sections, as hematoxylin followed by picric acid, eosin, or picro-fuchsin, etc. The hyper-

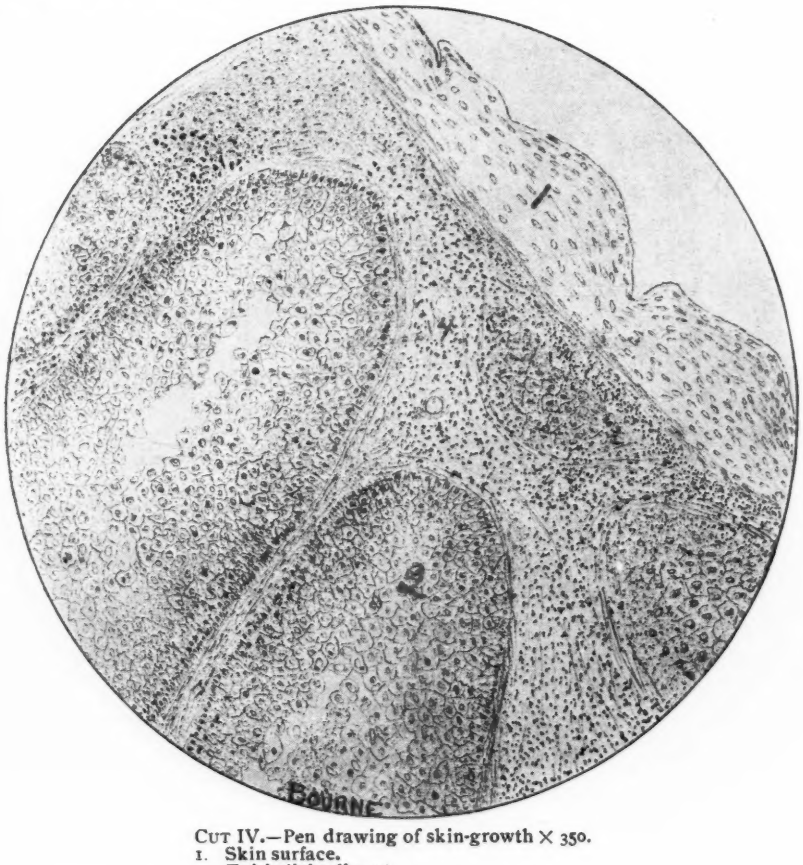


CUT III.—Pen drawing of growth from nasal mucous membrane × 350.
1. Surface of growth.
2. Area of epithelial cells; cells large in centre, becoming smaller and finally blending with 3.
3. Apparently connecting tissue undergoing mucoid degeneration.
4. Probably bloodvessels, the contained cells having a rod or oval-shaped nucleus, but the cells are smaller than normal red blood cells of the chicken. The cells are also quite irregular in shape.
5. Degeneration of central cells. The nucleus of the cell first disintegrates, and finally the cell body.

plastic tissue from the conjunctiva, nasal mucous membrane, buccal mucous membrane, or skin, is composed of nests of epithelial cells supported by irregular bands of connective tissue in which there is a limited blood supply. The cells are typical of cutaneous epithelium having a well-defined cell membrane, usually a nucleus with a nucleolus, and an oval or spherical body that stains yellow with picro-fuchsin and thought to be a

coccidium by some authorities. The cell nests may develop from glandular epithelium, subsurface epithelial nests, or more probably from surface epithelium, which in the attempt to repair the eroded surface becomes entangled in the ragged edges of the ulcers and develop as an epithelioma.

The nests increase in size by a multiplication of the peripheral epithelial cells. The rapidly multiplying marginal cells consume practically all the nutriment at the expense of the central cells, and as a result there is a cellular necrosis in the centre of the nests. The necrosis extends rapidly, destroying the cell nests and ultimately the entire growth. See Cut III and IV. Sections of the necrotic masses were composed of amorphous substances, there being some indication of cell nests and an occasional epithelial cell.



CUT IV.—Pen drawing of skin-growth × 350.
1. Skin surface.
2. Epithelial cell nest.
3. Necrotic area in centre of cell nest.
4. Supporting connective tissue.

It is rather difficult to clearly differentiate this disease from chicken diphtheria, roup, etc., for the cause is unknown in all these diseases. It is possible that all three diseases are the result of the same cause acting upon the different tissues or having a varied virulence.

In these cases reported the cause appeared to be transmissible, for frequently chickens in other coops in the same vicinity were affected. The prognosis is unfavorable if no treatment is applied. The disease is not difficult to control, as it responds readily to the free use of any reliable disinfectant, as 2 to 3 per cent. solutions of creolin, eucamphol, phenol, etc. We have obtained good results with Lugol's solution.

ANÆSTALGENE AS A LOCAL ANÆSTHETIC.

By L. McLEAN, M. R. C. V. S., and R. A. McAUSLIN, D. V. S., Brooklyn, N. Y.

Case I.—Fox terrier whose tibia was crushed while fighting with a larger dog; operated on five days after accident. Used 1 c.c. of Anæstalgene hypodermically, which produced perfect local anæsthesia throughout the amputation of leg, no ligature nor Esmarch bandage being used. Wound healed by first intentions, the styptic qualities of the anæsthetic being pronounced. There was no excitability of patient whatever.

Case II.—Grey gelding, admitted to hospital having large fibroid tumor on point of shoulder. Used 1 dram of anæstalgene in three different places. After dissecting to the back of tumor, found slight sensibility and then sprayed 1 c.c. into back part of wound, which produced perfect anæsthesia throughout the operation. No means of restraint were used on this horse whatever. Wound healed rapidly; no excitability.

Case III.—Bay mare, admitted to hospital suffering from empyema of superior maxillary sinus. Used one dram of anæstalgene hypodermically. Trephined into sinus, and cleaned same of all pus. In this case the anæsthesia was perfect; also no restraint of animal was necessary, and no excitability.

Case IV.—Black French poodle, admitted to hospital with large malignant growth on claw, which involved the bone. Anæstalgene, 1 dram, was used hypodermically, and the wound was sprayed while operating, owing to disarticulating the bone in centre of foot. Wound healed by first intention, the anæsthesia being complete throughout, without any excitability.

Have also operated on dogs' ears where anæstalgene was used, with perfect anæsthesia, and practically no hæmorrhage.

NAVEL INFECTION IN A FOAL.

By F. H. McNair, D. V. M., Mount Morris, N. Y.

I was called to see a 10-day-old sucking colt which presented the same symptoms as had three others in preceding years. Owner thought he was using extra precautions by keeping mares for a few days before foaling time and for two weeks after in a large basement box stall with dirt floor. Although the stall was well bedded, yet with the clay bottom there was considerable moisture present from the urine and natural dampness of the soil. This, together with very little light, made an ideal breeding place for bacteria.

Symptoms.—Anorexia, temperature 105°, and an abscess size of a goose egg on one fore leg just above fetlock. Umbilicus was closed and apparently healthy, but from the history and symptoms diagnosed it as navel infection and gave unfavorable prognosis. Opened abscess, when considerable cream-like pus was discharged. Syringed wound well with 3 per cent. creolin solution and prescribed 10 grs. each of quinine and potassium iodide internally every 3 hours. Next day another abscess formed just above fetlock on right hind leg, and temperature 105.5° F. Opened this abscess and continued same treatment. Third day abscess on right fore leg at stifle joint; temperature 106. Opened and proceeded as before. Fourth day colt died.

Post-Mortem.—Found umbilical vein filled with cream like pus and extending well into liver. Ante-mortem blood clot two inches long in right auricle and ante-mortem clot three inches long in right carotid artery. Abscess of one left iliac lymph gland.

The infection was probably from *B. coli communis*, but had laboratory facilities been at hand it would have been interesting to definitely determine that point.

Owner was advised to keep future colts out of that stall and for the two years since the above case has had no such trouble.

TWO CASES WHICH RESPONDED TO MILK FEVER TREATMENT.

By G. E. Corwin, Jr., D. V. S., Canaan, Conn.

No. 1.—Symptoms and History:—Recumbent position and unable to rise, temperature 98° F.; calved seventy (70) days previous: giving twenty (20) quarts of milk per day; was apparently healthy until found down; in good condition and had been on pasture for a month with no other food. She was not

comatose, rectum filled with hard fæcal matter, but owner was sure her bowels were all right the day before. Treatment: Sterilized air injected into udder and hypodermic injection of strychnia et digitaline. Recovered in three hours and ate bran mash; no further treatment and all functions became normal.

No. 2.—Large grade Holstein; calved ten (10) days previous; was led to water and drank about two pails (cold); while she was being led back, it was noticed that she acted stiff behind. I was called and found her standing, temperature, respiration and pulse normal, and standing quiet, but when made to move, acted a little stiff behind. I made no positive diagnosis, but gave her a drench of quinine ℥ *ss* (dissolved in acid); tinct. gentianæ comp., ℥ ij; tinct. capsici ℥ ij; spts. nitre q. s. ℥ v. Thought her trouble might be due to drinking cold water. Immediately after giving the drench she regurgitated and commenced to ruminate.

I heard from the owner next morning, and he said she was apparently all right, but that her appetite wasn't very good. I called again and found her acting bright, with normal functions; left tinct. gentianæ comp. et strychnia to be given twice daily.

Three days later the owner called me again. When I arrived, I found her down on her knees and standing behind; she had been in this position for about three hours and wouldn't move. She had eaten a bran mash in the morning and all the functions were normal. I did not make a positive diagnosis, but told owner I thought she was trying to have milk fever and consequently treated her accordingly. Sterilized air injection into udder, hypodermic injection of strychnia et digitaline. Heard next day that she was as well as ever, and has had no further trouble.

LAVAGE OF THE LUNGS.

By F. H. McNair, D. V. M., Mount Morris, N. Y.

A cow in an advanced stage of parturient paresis. Gave a hypodermic of 1 gr. of strychnine and applied air treatment. The next morning, as patient seemed entirely recovered but was badly constipated, a large dose of epsom salts, about 1½ pounds, with ½ pound of common salt, was administered. She choked on the last bottleful of the drench and was immediately seized with severe dyspnœa. As owner stood by and understood the situation, perfect frankness with him was the only course to

follow. Told him my warning not to allow cow to eat or drink a thing during the acute stage was necessary because of paralyzed condition of throat, but as this symptom seemed to have passed away I had ventured to drench her, with the result noted. The more than saturated solution of salts was of course very irritating to the lungs and inhalation pneumonia was feared. It seemed a case where desperate measures should be used. Tracheotomy was performed and a sterile rubber tube inserted into trachea and about 3 quarts of sterilized water poured down. Dyspnœa was severe for a time, but the solution was gradually absorbed and cow made a good recovery in a few days.

Will some one inform me whether or not when oil has accidentally gotten on the lungs it could be discharged by filling the bronchi several times with sterile water poured through a trachea tube and thus avoid inhalation pneumonia?

WHAT CONSTITUTES OMASUM IMPACTION?

By F. H. McNair, D. V. M., Mount Morris, N. Y.

Having lost several cows apparently with impaction of the third stomach, the query arises: what constitutes impaction of the omasum? Of course we know that food normally appears rather hard and dry in this stomach, but when an animal has eaten nothing for four or five days before death and post-mortem examination reveals a mass of food in the omasum, it would seem sufficient proof of impaction.

The great Hackney show mare "Hildred," with her mate "Plymouth Champion," owned by Eben B. Jordan, of Boston, were recently sold to Miss Emily Bedford, of Brooklyn, N. Y., who will enter them in many of the Eastern shows during the year. The price is not stated, but it is known that Mr. Jordan refused $20,000 for "Hildred" alone.

The Georgia State Veterinary Association, recently organized, has sixteen active and four honorary members. Its December meeting was full of energy, and it is striking at the foundation for the advancement of the profession in that state, having bills already prepared for the coming meeting of the General Assembly creating the office of State Veterinarian and an examining board to govern the proposed practice act. The report of their meeting, printed elsewhere, has the right ring, and with the spirit displayed the members may be congratulated in advance on their success.

EXTRACTS FROM EXCHANGES.

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

TORSION OF THE BLADDER IN A DOG [*M. Griveaux*].—An aged King Charles bitch has been making violent efforts to micturate without results. Her general condition is rather serious. She is unable to make water, and all her straining has for result the discharge of a little soft fæcal matter, which soils the tail and the legs. The animal is very thirsty, the nose is dry and hot, conjunctivæ are congested and the pulse quick and small. Exploration of the abdomen shows that it is distended and the skin is very much congested. Trying to introduce a catheter, it is soon arrested and the introduction of the finger into the rectum fails to reveal the nature of the obstacle which arrests the catheter, but at that time the dog manifests a violent pain, which is such that further examination is suspended. To try to give temporary relief the bladder is punctured through the rectum and a glass of urine is extracted. The next day the animal is chloroformed. At the post-mortem the bladder is found extremely distended. Pushed out of the pelvic cavity, it is found completely twisted on itself, dark and softened by hæmorrhagic exudates. The walls were inflamed and on the point of bursting.—*(Jour. of Zoötech., 1906.)*

PROLAPSUS OF THE RECTUM FOLLOWED BY DEATH OF A HORSE SECURED IN THE DECUBITAL POSITION [*MM. Cazaux and Lasserre, Students*].—This stallion had for two years and was to be fired for articular and tendonous windgalls of the four extremities. After all the necessary precautions about diet, even several days before operation, the animal was cast, properly secured and operated. All went well until towards the end; suddenly the horse struggled violently, and all at once the rectum came out for a length, not less than seventy centimetres of the organ protruding. This was reduced immediately and the operation concluded without any more trouble. The horse was carefully watched, and seemed at first quiet and comfortable; but this condition did not last, and he soon showed abdominal pains, which gradually assumed an ugly character until, notwithstanding the best care, the animal died forty-eight hours after the accident. Autopsy: Small mesentery and float-

ing colon congested; rectum healthy; peritoneum contains two litres of bloody exudation. In the large colon, there is an accumulation of hard, dry fæces, true balls about as big as the fist. Two are as large as a man's head, one is arrested at the diaphragmatic and the other at the pelvic curvature. The stomach is empty and the small colon contains soft fæces. The other organs are healthy. The presence of the hard fæcal mass explains the irritation produced on the intestine and promoted the prolapsus.—*(Revue Veter., 1906.)*

ENCEPHALITIS FOLLOWING A FALL [*M. Joyeux*].—After a severe fall, in which a mare had required some time before being able to rise, she was brought to her stall, where during three days she exhibited a series of symptoms which can be resumed as follows: In standing up, she carries the head low down, the neck resting on the manger. When walking, locomotion is in circle, either to the right or to the left, but principally to the left. When lying down, she is stretched and looks as if she was dead. This condition lasted for three days, when she showed undoubted symptoms of photophobia; she is afraid of the light from a lantern. Then her condition is such that she is put out of the way, with a few inhalations of chloroform. On post-mortem, numerous ecchymotic spots are found on the body. The mucous membrane of the nasal cavities, of the turbinated bones and of the ethmoid are full of blood. On opening the cranium, the left lobe of the brain is found intact, the right has its surface covered with blood. Above the ventricle and in its external half, the brain substance is crushed into a mush. There is a little citrine liquid in the cavities of the ventricles. Nothing in the cerebellum. There is a fracture of the basilar process, without displacement.—(*Revue Veter., 1906.*)

A CASE OF MEDULLARY PARAPLEGIA WITH SYRINGOMYELIC LESIONS, IN THE HORSE [*Mr. Lefebure*].—This mare is eight years old, in good health, when having walked some eight miles, she shows stiffness behind, with slight lameness on the left hind leg. There is no muscular swelling on the croup. Called at once, the author gives a diagnosis of threatening paraplegia with serious prognosis. Appropriate treatment is immediately applied, and with much difficulty the mare is taken home. When she arrives, she micturates and her urine is free from any coloration. Soon she begins to tremble on her hind legs, and, notwithstanding the greatest efforts, she drops down and is unable to stand. Made to get up, she does it with the utmost difficulty, remains standing but a short time, and soon drops. At first she

lies down quietly, but after a while she begins to struggle and in a short time she is taken with violent spasms, which are such that the owner orders her to be killed. Post-mortem: Connective and muscular tissues are normal; muscles, especially the psoas, firm but of a red rutilant color. Nothing in the chest or the abdomen. Spleen and liver as well as the kidneys are apparently healthy. One of the kidneys contains a little pus. Bladder empty. It is in the spinal cord that the lesions are to be found. Some vascularisation of the membranes. The spinal cord stretched on a table, an incision is made alongside the left lateral fasciculus on a level with the lumbar bulb and a cavity is exposed. This cavity is elongated, in form of a tunnel, and extends from the third lumbar vertebra to the first third of the sacrum. It has a diameter measuring about one centimetre. The walls are formed of white substance and covered by a thin layer of grey matter. Another incision made on the other fasciculus, on the right side, shows the same lesion to exist, but extending less forward and backward than the other; it is otherwise identical with it. Both cavities are independent of the ependymar canal. The white matter of the cord seems macroscopically intact; the grey matter is destroyed and softened into a pulp adherent to the wall. This pulp, examined under the microscope, shows, after coloration with the blue of methylene, stared cells, leucocytes, red corpuscles and staphylococci. Cultures of the pulp on gelose gave colonies of staphylococci. The pus found in the left kidney contained the same microbes, which were also detected in the blood. However, the virulency of these staphylococci was not present, as three guinea-pigs supported the peritoneal injection of two cubic centimetres of its culture without being disturbed by them.—(*Recueil de Médecine Vétérinaire, 1906.*)

Diaphragmatic Hernia in the Horse [*Mr. Roux*].—Used for light draught, this gelding, aged 10 years, is taken with colic. The history is as follows: The evening before he ate poorly, was uneasy, and in the morning refused his food. Yet he has done a little work. The colics have increased, the mucous membranes are injected, pulse strong and quick, no tympanites, respiration accelerated and expiration double. By auscultation nothing is detected on the left side except in the superior quarter, where the vesicular murmur is exaggerated. The same on the right side. Diagnosis uncertain: Indigestion, pulmonary congestion, pleural exudation or diaphragmatic hernia. Treatment: Chloride of barium, mustard poultices, blood

letting, ether, pilocarpine, etc.; nothing does good; the horse dies. At the autopsy, on opening the thoracic cavity, almost the whole of the small intestine is found, lodged between the external face of the left lung and the thoracic wall. Slightly distended by gas, it is purplish in color and has entered the chest through an opening in the centre of the diaphragm, behind the stomach, slightly deviated on the left of the œsophagus. This opening is irregular, measures about six centimetres, with borders congested. Through it the intestine, the mesentery and the great omentum have passed into the thorax. The small size of the opening, producing a firm constriction on the intestinal loops, diminished the peristalsis and consequently the production of the borborygms, which would have served much to make a correct diagnosis.—*(Recueil de Médecine Vétérinaire, 1906.)*

Complete Fracture of the Radius and Cubitus in a Horse—Consolidation Without Contentive Apparatus [*L. Dupas*].—A severe kick on the lower third of the front part of the forearm makes this horse very lame. There is a small cutaneous wound only, but the soreness is very great and the animal does not rest the foot on the ground; in walking the toe is dragged on the ground. All the symptoms point to a fracture of the bones of the forearm, incomplete but fracture anyhow. The animal is placed in slings and a blister applied over the injured region. The cutaneous wound properly attended to soon healed. On the seventh day following, the leg is much swollen and careful exploration reveals a different state of things; the fracture is complete, and crepitation is well marked, yet the deviation of the bones is not much marked. Taking that into consideration and bearing in mind the condition of the œdema of the leg it was decided to treat the case without resorting to any contentive bandage, plastered or others. The slings were kept on and only the swelling received special attention, namely, lotions and light massage with camphorated oil or alcohol. After ten days the swelling went down and began to define itself to the seat of the fracture. The leg then showed its deformity; it was a little bent backward and a little shortened. After one month the callus was well formed, the animal beginning to put weight on it. The slings temporarily removed, showed that the leg was much emaciated. By passive motion first, and later a little walking and moderate exercise the animal was finally discharged, but of course unable to perform his work in the army; he was sold

and later on killed for the butcher. On examination of the bones it was found that the fracture had been oblique, with the ends slipping over each other. The callus was very large and united both radius and cubitus very firmly together.—*(Revue Générale, 1906.)*

TWO CASES OF FRACTURE OF THE VERTEBRAL COLUMN, ONE OF WHICH IS RAPIDLY FATAL [*MM. Durand and Vignon*].—*Case I.*—Seven years old, this horse in jumping an obstacle, misses, makes a regular sommersault and remains on the ground unable to rise. When he is examined, he presents a little back of the base of the withers and on the median line a hard swelling slightly œdematous and as big as a hen's egg. By pressure upon that point, crepitation is detected and the animal shows great pain. Paralysis and anæsthesia of the hind quarters are complete. At the post-mortem severe lesions are exposed: the eleventh dorsal vertebra is fractured, in numerous small pieces, the spinal cord is cut in two, and the spinous processes of the ninth, eleventh and twelfth dorsal are fractured at their bases; a large hæmorrhagic collection due to the laceration of the inter-vertebral bloodvessels exists on the internal face of the ribs and infiltrates in all the surrounding muscles. The aorta is sound. *Case II.*—One day, a mare is brought to the writers for treatment. She always carries her head down and struggles when attempts are made to raise it. Otherwise the mare is well, eats her ration and her functions are normal. It is supposed that she has only a little sore neck, and after a simple treatment she seems to have sufficiently recovered to resume work. A few days later, as she is engaged in slight work, she suddenly falls, and makes uselessly violent efforts to get up. She is in the right lateral decubitus; now and then moves her fore legs. On a level with the superior third of the neck, there is a large swelling, elastic and somewhat fluctuating; respiration is slow and gradually stops, pulse is quick and strong, there is venous pulse, the eyes and mouth are cyanotic, general sensibility much reduced, eye immobile and pupil dilated. In a few minutes death takes place. At the autopsy were found: A large hæmatoma, where the swelling existed on the outside and all the perirachidian muscles are infiltrated with blood, on account of the rupture of both vertebral arteries. The anterior articular processes of the third cervical vertebræ no longer correspond to their congeners of the axis, which itself has made a motion of torsion from left to right and has its right articular process under the corresponding one of the third cer-

vical, while the left remains under. There results from this a pressure over the spinal cord, quite severe, but yet not sufficient to divide it. There is also surrounding the cord a large clot of blood extending from the rachidian bulb to the base of the neck. There is, besides, a complete fracture of the third cervical vertebra at its anterior head, the body is broken obliquely downwards and backwards; the head, perfectly adherent to the axis, is completely separated from the body. A large ulceration existed on the articular cartilage of the left apophysis of the axis. Besides the extent of the lesions, the interest of this case lies in the presence of the clot of blood, making a true increasing strangulation upon the bulb, to which was added the pressure of the cord by the dislocated second vertebra.—*(Revue Générale de Médecine Vétérinaire, 1906.)*

GERMAN REVIEW.

By J. P. O'Leary, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

Ascites in a Bird [*Asst. Clin. Vet. Jacob Wohlmuth*].—At one of the clinics for small domesticated animals held during the month of April of this year, a hen was examined and diagnosed as suffering from ascites. Notwithstanding this condition the bird seemed lively and had a very good appetite. After the operation of tapping, a large quantity of fluid was removed (about three-fourths of a litre). Prof. Storch had the kindness to undertake the analysis of this fluid. His report is as follows: The fluid was almost colorless, like water, sp. gravity 1,010 at 15 C. and intensely alkaline in reaction; considering the degree of alkalinity, it required 30 c.cm of 1/10 normal sol. of sulphuric acid to neutralize 100 cm. of the ascitic fluid. The albuminous substances present were albumins and globulins. Sugar and glycogen were not detected by the ordinary tests. The greater portion of the mineral ingredients were composed of the chloride of sodium and calcium, the carbonates and phosphates of calcium and magnesium, a trace of uric acid present. The fluid was blood serum. A subsequent operation was performed to obtain more of the fluid from the abdominal cavity, but was unsuccessful. However, it seemed that this morbid condition did not interfere with the general health of the patient. The hen still lives and is in a well-nourished condition. Through palpation of the cloaca, it may be assumed

that a degeneration of the ovaries was probably the cause of the ascites.—*(Tierärztliche Centralblatt, No. 26.)*

MEDICINAL REMEDIES [*Dr. Diem Burghausen*].—For *acute tympanites in calves*, the following was administered with good results: (1) Ol. terebinth., 10.0 grams; ol. carui, 1.0 grams; ol. menthæ pip., 1.0 grams; ol. caryophylli, 2.0 grams. Mix. This is a prophylactic. Afterwards one tablespoonful of cod-liver oil three times daily before feeding. (2) For *Diarrhœa*:—Acid muriatic 10.0 grams, in one litre of water, to be given one hour after feeding. (3) Bisulphide of carbon given in gelatine capsules *destroys the œstrus larva* (or bot), to be followed by tartar emetic as a laxative, in the drinking water. (4) For *petechial fever*:—Argentum colloidale is injected subcutaneously, although large swelling forms as a consequence. However, they readily disappear by massage treatment. (5) Potassium iodide is given in *subacute inflammations of the brain*, 25.0 grams in 200.0 grams of water. Dose, one tablespoonful twice a day. Later, Fowler's solution of arsenic. These remedies are prescribed also for chronic nasal catarrh in horses and dogs. Animals usually recover after two or three weeks' treatment. (6) Formaldehyde 10 per cent. is used for *cracked heels* and *old calk wounds;* subsequent treatment with ungt. plumbi acetatis. (7) A 1 per cent. solution of picric acid is recommended for *bed sores*, also for *suppurative pruritic inflammation at the root of the tail.* As a secondary application, cresol liniment is advocated in 3½ per cent. solution. (8) Extract hydrastis fluidum is used with success in the treatment of *polyuria* and *bloody milk.* (9) Aconitin is prescribed for *heart failure* with benefit.—*(Wochenschr. für Tierheilkunde und Viehzucht).*

THE GASTRUS LARVAL DISEASE OF THE HORSE IN ITS SIGNIFICANCE FOR THE REARING OF FOALS, PARTICULARLY IMPROVED BREEDS [*Staff Veterinarian Kröning*].—K. observed within the last five years very grave symptoms of disease in 5 horses and 26 foals; even 3 foals died as a result of the action of the gastrus larvæ in considerable numbers. In addition to the symptoms of cachexia, there appeared in many cases those of colic. The diagnosis was rendered easier by the history that the animals had enjoyed a long season at pasture. K. observed as follows, that when the foals were brought back from the pasture in the autumn they were in good condition. Soon after, the appetite became intermittent, with consequent roughness of the coat, paleness of the visible mucous membranes, œdema,

cardiac weakness, exhaustion. Regarding treatment, Perroncito recommends bisulphide of carbon as the best remedy. K. prescribed the bisulphide in two capsules, each containing 8.0 grams every two hours; this dose was repeated three times; in all 48 grams were given. As a secondary treatment the following may be administered with benefit: tartar emetic, 10.0 grams in the drinking water the morning after the last dose of the carbon bisulphide; an aloes ball or castor oil with calomel. The author's aim in his publication is to bring about a change from the false conception that the gastrus larvæ may be harmless even when occurring in large quantities.—(*Zeitschrift für Veterinärkunde, 1906, S. 202.*)

INVESTIGATIONS WITH REGARD TO THE INFLUENCE OF THE OVARIES AND THE CORPUS LUTEUM UPON BIRTH [*M. Dubois*].—Aroused by the work of M. L. Franenkel, Dubois had experimentally sought to solve the question, what influence the ovaries, especially the corpus luteum, has upon the initial stage of parturition? He removed by operation, the ovaries of rabbits which were in various stages of pregnancy. They threw living young after the expiration of the normal time. Similar results were obtained by Jourdon in the case of pregnant sows. He injected other pregnant rabbits subcutaneously or intravenously with the parenchymatous juice from the ovaries of pregnant rabbits, with the same success. So that after the expiration of the normal period of gestation, birth took place. Neither the ovaries nor corpus luteum or their secretions are accountable for the stimulation of the uterine contractions.—(*Revue Vétérinaire, 1905, No. 12.*)

THE INTESTINAL AND VAGINAL EMPHYSEMA OF SWINE [*Dr. Jäger, Frankfurt*].—Dr. Jäger sought to refute the physical theory concerning the origin of the so-called mesenteric emphysema. He has established by cultivation and animal experimentation that the organism which he names as *Bacterium coli lymphaticum aërogenes* is the cause of the emphysematous condition. This organism is peculiar in that it possesses great motility and the ability to form gases. The gas vesicles never develop in the free connective tissues, but in the wall of the affected parts. The minute gas vesicles originate in the intestinal villi; they wander from the lymphatics through the mucosa and adjacent parts until they reach the serosa, and only when the development of the gas vesicles are well advanced, giant cells appear, which may contain many hundred nuclei. These changes have been already referred to by previous authors as

characteristic. Lubarsch is of the opinion that the vaginal emphysema of females is not caused by the *Bacterium coli lymphaticum aërogenes.* Dr. Jäger has not been able to determine by bacteriological examination the cause of this emphysematous condition.—(*Tierärztliche Centralblatt, No. 31.*)

How Long Does the Tetanus Bacillus Retain its Virulence [*Croci*].—Croci saw a mule that contracted tetanus, which terminated fatally. This animal had chafed wounds on both sides of its back, which were caused by a pack saddle. A second mule, owned by the same person, had the same saddle placed upon its back, which also chafed the skin underneath, causing tetanic infection, resulting in the death of the animal. After three years the same owner bought a new mule and placed the same saddle again on this animal which the dead animals carried three years previously. After ten days the third mule was affected with tetanus and died. This animal had also two chafed wounds caused by the saddle. Croci concludes from this incident as reasonable that the tetanus bacillus in the saddle was still virulent and had led to an infection of the wounds.—*(La Clinica Veterinaria, 1906, S. 641.)*

Investigations Concerning the Cause of Hydronephrosis in Swine [*Dr. Lucks, Hamburg*].—Hydronephrosis in swine is caused through a congenital malformation in the position of the ureters, which lie too far posteriorly in the neck of the bladder and their peculiar position and loose attachments of the relatively very large bladder. In exceptional cases, through pathological conditions, hydronephrosis may be caused by inflammation of the bladder and ureters, obstruction of the ureters by urinary calculi, obliteration of the orifice of the ureters in the bladder, and so on.—*(Monatshefte für Prakt. Tierheilk., Band XVI., Heft. 7 und 8.)*

The Bacterial Flora of the Healthy Genital Canal of Cattle in Its Significance for the Conditions Arising from Puerperal Fever [*Assistant B. Denzler, Stuttgart*].—The bacterial flora of the vulva, as Denzler had determined, is numerous and variable. The vestibule secretion contains pathogenic microörganisms, especially the *Staphylococcus pyogenes aureus, albus* and *citrus*, the *Streptococcus pyogenes* and the *Bacterium coli communis.* These bacteria, with the exception of the *Bacillus coli communis*, are found in an attenuated condition. In the interior of the healthy vagina none of the above mentioned pathogenic bacteria can vegetate under normal conditions. In abnormal transitory presence of these bacteria

in the vaginal secretions the external os forms the line of demarcation between the germ-containing and germ-free zone of the genital canal. The vagina of calves, of non-pregnant and pregnant cows, has a faculty of self-cleansing, that is, the vagina is able to eliminate bacteria, which either gained access accidentally or are experimentally placed therein, especially those causing puerperal fever. This cleansing of the vagina is complete and permanent. The duration of the self-cleansing process of the vagina depends upon the species of microörganisms and varies between 18 and 117 hours. The phenomenon of self-cleansing in cattle is not entirely analogous to that observed in women. Antiseptic vaginal douches do not aid the physiological cleansing process. The ability of freeing the vagina from bacteria in cattle depends on the living organism itself and is proven upon the occurrence of a leucocytosis or phagocytosis. Self-infection with vaginal bacteria is excluded in cattle. An auto-infection due to bacteria from the external genitalia or from exterior sources is, on the contrary, possible.—(*Monatshefte für Prakt. Tierheil., Band XVI, Heft 4 und 5.*)

DR. B. O. MINGE (McK. '01), has been appointed inspector B. A. I. and stationed at Chicago.

AN excellent college bulletin is the *Journal of the McKillip Veterinary College Alumni Association*, published by the Executive Committee of that recently formed organization, of which Dr. Charles Frazier, 1639 Wabash Avenue, Chicago, is Secretary. It contains original articles, editorials, reports of cases, colleges items and alumni news. We congratulate the Association upon its enterprise and evidence of determination to make its influence felt for the benefit of its members, its *alma mater*, and its profession.

"LOU DILLON" HALF SISTER TO A MULE.—*Memphis, Jan. 20.*—Information reaching the local colony of horsemen in winter quarters at the "Two Minute" track, including Ben Kenney, Ed. Geers and other noted trainers and drivers, is to the effect that Lou Dillon, the trotting queen, will soon bear the unique distinction of being half sister to a mule. Letters received from California, where Lou Milton, the twenty-five-year-old dam of Lou Dillon, is stationed, tell that a mule foal is expected. It is believed here that C. K. G. Billings, Lou Dillion's owner, will buy the mule at almost any price, as there has been some talk of freak collectors purchasing Lou Milton's foal for exhibition purposes.—(*New York Sun*).

SURGICAL ITEMS.

By Drs. Louis A. and Edward Merillat, Chicago, Ill.

MALIGNANT ŒDEMA, WITH REPORT OF TWO INTERESTING OUTBREAKS.

From time to time we have brought this subject before the readers of the Review for the single purpose of bringing it more conspicuously before the rank and file of the veterinary profession of America. Although this fell affliction of all mammals has been recognized as a special entity for many years by Europeans, and although many years have already elapsed since Pasteur demonstrated its bacterial origin and isolated the causative microbe, it is rather discreditable that many of us have heretofore failed to recognize the disease when encountered.

Our correspondence very often contains a letter of inquiry about a mysterious death of a horse from a disease that greatly resembles symptomatic anthrax of cattle. As the horse is well known to be non-receptive to anthrax bacterium, a case of malignant œdema in districts where the former is rampant, if not recognized, may easily excite the curiosity of an unsuspecting practitioner, the two diseases being so similar in many particulars. Both the local and the general symptoms simulate each other.

In France malignant œdema was recognized as early as 1825 by Renault. In 1875 Pasteur announced his discovery of the specific microbe, which he named the *Vibrion septic.* In the lecture courses of at least some of the most prominent American colleges no mention was ever made of the disease until English translations of German books on pathology were introduced as text books, and even then no special description was undertaken because of the supposed rarity of the disease, and probably because it had not been recognized as a special entity. The galloping, phlegmonous blood-poisonings were not separated one from another, but were described under the one ambiguous, if not ridiculous phrase, "phlegmonous erysipelas."

Nomenclature.—In England, Germany and America the disease is quite generally called "*malignant œdema,*" to the exclusion of all of the other names which have from time to time been assigned to it in different countries and by different pathologists. In France it is now quite generally known by the

name of "*gangrenous septicæmia.*" "*Traumatic gangrene*," "*emphysematous gangrene*," "*thundering gangrene*," "encroaching gangrene," "instantaneous gangrene," "*gaseous gangrene*," "*gaseous septicæmia* and "bronzed erysipelas" are among the many more or less lucid appellations.

Receptivity.—Malignant œdema occurs in man, in the horse, in the ass, in the sheep, in the dog, and even in the domestic fowls. There is still some doubt as to the receptivity of bovines, although Nocard once announced having found the septic vibrio in muscular tumors of cattle, and Kitt experimentally conveyed the disease to the ox. These and other facts indicate that cattle are receptive. The dissenting opinions undoubtedly result from errors in diagnosis; from mistaking it for symptomatic anthrax. It is quite safe to-day to announce that malignant œdema affects all domestic animals and man. According to Cadéac, the relative receptivity of animals is indicated in the following descending scale: Horse, ass, sheep, pigeon, rabbit, chicken, white rat, dog, ox, cat, duck.

Bacteriology.—The bacillus of malignant œdema, isolated by Pasteur in 1875, is an anærobic, ærogenic, motile, sporogenous, flagellated bacillus. It is an inhabitant of well-tilled soil and its products—hay, cereals, vegetables, etc. It is from two to ten microns long and about one micron thick. It does not take Gram's, but stains readily with Loeffler's blue. It can be cultivated both in liquid and solid media, growing with special rapidity at the heat of the body, but slow at ordinary room temperatures.

The bacillus is promptly killed by exposure to oxygen, but effectually resists antiseptics in ordinary strengths. Five per cent. solutions of carbolic acid do not sensibly modify its virulence after twenty-four hours' emersion. It resists both desiccation and moisture, and is only killed after several minutes' boiling.

In living tissues, if inoculated into a favorable, sheltered environment, especially if associated with other pathogenic microbes, it produces a reaction in from twenty-four hours to three days, in the form of an advancing, painful, crepitant swelling that radiates in every direction, with great rapidity, and at the same time immediately causes grave systemic disturbances which terminate fatally in twenty-four hours to five or six days, unless combatted by an energetic treatment at the seat of infection. A fatal termination is inevitable, unless it is promptly recognized and energetically treated.

Occurrence.—Malignant œdema is not a very common disease. Its rarity does not harmonize with the wide distribution of the microbe which, according to Pasteur and later Cornevin, is very abundant in well-cultivated soils. The infrequency of the disease is due to the fact that the pathogenicity of the microbe depends upon a number of conditions which are not frequently combined. The microbe is anærobic; it requires a well-sheltered environment in the living tissues; the trauma, in addition, must be somewhat bruised or otherwise provided with a suitable soil for microbian growth; and it must be associated with accessory bacteria, such as the golden staphylococcus, to prevent it from falling prey to englobing phagocytes.

There seems to be abundant experimental proof that the bacillus of malignant œdema, like the bacillus tetanus, does not act alone, but requires the assistance of other "favoring" bacteria, which play the important rôle of assisting the specific microbe to gain a "foothold" in the healthy tissues around the trauma. These essential conditions account for the infrequency of the disease among animals as compared with the wide distribution of the microbe.

Symptoms.—In the horse the disease follows wounds about the shoulders, neck, chest, withers, buttocks and feet. Its first manifestations are pain at the seat of inoculation and crepitation in the surrounding subcutem, together with early general symptoms: fever, anorexia, pronounced dejections, etc. The local phenomena and the general symptoms accentuate rapidly. The œdema advances in every direction, leaving a gangrenous area behind, from which froth will exude on section with the scalpel. If the subject survives long enough—that is to say, if the microbian invasion is not promptly fatal—the swelling becomes enormous and the gangrene deep and extensive, which feature led Pasteur to characterize the disease as "putrefaction of the living subject."

Sometimes the subject dies quite suddenly after only twenty-four hours and before there has been any warning of the gravity of the affection. More often, however, it lingers for several days, and if the infected area is submitted to an energetic extirpation of the hot-bed, and free incision of the emphysematous surroundings, the advancement may be temporarily checked and the general symptoms improved. But usually this treatment is useless (unless executed very soon after the appearance of the first local symptom) and the patient dies in spite of everything, three to seven days later.

Malignant œdema affecting the feet lacks some of the pathognomonic signs. The emphysema confined within the hoof cannot be as easily recognized as in the loose subcutaneous tissues. On paring the hoof, however, limited quantities of gas sometimes escape and the frothy exudation is never absent. The lameness is intense, no weight is supported on the affected leg, large sections of hoof may be torn off with the pincers without provoking hæmorrhage, the respirations are markedly accelerated, the pulse is quick and small, there is distress expressed in the countenance, perspiration appears in large patches at different parts of the body, decumbency is avoided, the whole body trembles and finally topples over in sheer exhaustion. Death usually follows a few hours later.

In the ox the symptoms, as above mentioned, simulate symptomatic anthrax, especially when caused by wounds about the shoulders, thighs and hips. In this species it may follow parturition and then present features not seen in black-leg. The pudendum, three to four days after parturition becomes swollen, tense, sensitive and crepitant. The tumefaction surmounts the root of the tail, advances over the gluteals and often extends as far forward as the croup and loins. Downward, it may extend as low as the hock and forward as far as the udder.

It is differentiated from symptomatic anthrax by bacteriological examination, by occurring in districts where the former disease does not exist, by affecting only isolated cases instead of spreading through the herd, by affecting animals of all ages instead of only the young, and by experimental transmission to species that are non-receptive to the latter.

First Outbreak.—The use of the word "outbreak" in connection with malignant œdema may be somewhat misleading, as a number of animals are never simultaneously attacked, except when each has been submitted to the same cause or else when the infection is carried directly from the infected wound of one animal to favorable wounds in other animals, as might easily occur in the performance of a number of consecutive surgical operations, after having contaminated the hands or instruments with infected wound secretions from a subject affected with the disease. In short, malignant œdema is not contagious, epizoötic nor enzoötic. It is but a wound infection and the wound must be a special one. Still, the fact that on these two occasions, several horses were simultaneously or consecutively attacked before the spread was controlled, justifies the use of the word

"outbreak," if for no other purpose than that of emphasizing the dangerousness of the disease.

The history of this outbreak is dated November, 1906. It occurred in a well-known veterinary hospital where more than usual precautions are taken in the direction of antisepsis. The first case was caused by an accidental wound, from which three surgical wounds each on different animals became infected. The first case entered the hospital immediately after sustaining a serious injury in a runaway accident, consisting of a contused, lacerated stab with a blunt, wooden shaft of a single delivery wagon. The wound was located in front of the shoulder at the level of the middle third of the scapula. It was treated as usual, but on the third day the surrounding tissues began to swell rapidly; the appetite failed; the countenance expressed anguish; the temperature rose to 104° Fahr., and attempts to move provoked intense pain. The nature of the complication not being immediately recognized, the patient was treated for septicæmia, consisting of free extirpation of the tissues lining the wound, of free drainage, and of a prolonged irrigation with hot mercuric chloride solutions. Twenty-four hours later the complication was recognized as malignant œdema by the appearance of the characteristic emphysema in the surrounding subcutem, by the pronounced accentuation of all of the symptoms already described, and by the frothy secretion that exuded from every visible part of the lesion. The diagnosis was, however, made too late to be of service, as the patient was already in a dying condition and the local phenomena had developed beyond control. Death ensued about twelve hours after the disease was recognized, thirty-six hours after the appearance of the first symptoms.

After operating upon this case of supposed septicæmia, three other horses were submitted to operative treatment during the following two hours. The cutting instruments were sterilized by boiling according to an adopted custom, but no special attention was given to other possible carriers of infection, such as the hands, especially those of the assistants, basins for antiseptic solutions, clippers, rubber syringe, and the operating table, because the animal previously treated was not suspected of having so serious an affection as malignant œdema, and possibly also on account of a customary reckless inclination to hurry through a number of operations in a short space of time.

The second patient was submitted to a radical operation for fistula of the withers. Two long, parallel incisions were made

along either side of the median line and a long strip of the superspinous ligament was resected. These wounds were packed with antiseptic cotton and sewed up to arrest hæmorrhage. The horse was sent home, about six miles away, with instructions to remove the packing on the following day, to irrigate the wounds and then to apply an absorbable antiseptic powder. These instructions were not followed, as on the fourth day, the horse having been reported in a serious condition, the packing was found still sewed up in the wound. In fact, no attention whatever had been given it. The whole withers was enormously swollen, and a reddish froth was bubbling between the stitches along the entire length of each wound. The patient breathed heavily, ate nothing, refused to move about, had a high fever, and in fact showed every symptom of approaching dissolution. The wounds were opened and the packing was removed. Froth bubbled from every part of the raw surfaces. On section the tissues bounding the wounds were insensible, bloodless, dead; only froth exuded from them. The whole withers was mortified. Death followed twenty hours later, about five days after the operation.

The third patient of this outbreak, had sustained a serious contused wound at the crest of the occiput by rearing and falling backwards against the street curbing. A cursory examination on the street showed that the occiput was fractured and protruding through the broken, bruised skin. This operation followed closely after the fistula operation, and consisted of clipping the forelock, mane and hair of the environs; resection of two fractured segments of the occipital crest; and a thorough irrigation of the recesses of the wound with hot mercuric chloride solution. As the bleeding was trivial, the wound was not packed but only sprinkled freely with boric acid and iodoform. Four days later this subject too fell a victim to malignant œdema and died a lingering death after ten days of illness. The death of this case was undoubtedly delayed by the prompt and energetic treatment carried out from beginning to end.

The fourth patient was operated upon immediately after the foregoing one. This subject was lame from a spavin and was submitted to neurotomy of the deep peroneal nerve at the level of the middle third of the tibia. This operation was performed with great care as to surgical cleanliness; in fact, it could hardly have been improved upon from that standpoint. The instruments, some of which had been used in the preceding operations, were all boiled for ten or fifteen minutes; the operator's hands

and those of the assistant were well washed; the seat of operation was shaved, washed with soap and water, rinsed with mercuric chloride solution (1–500) and then bathed with alcohol for a few moments; the technique was carried out without once touching the exposed tissues with the hands; the baling solutions were made from boiled water and the basins containing them had been previously rinsed out under a faucet of scalding hot water; in fact, everything was as clean as possible and the whole procedure was executed with full consideration for the possible danger that might result from the operation on the supposed case of septicæmia previously mentioned. Every avenue through which infection could enter was doubly guarded, because of the nature of the operation. The deep dissection necessary to find the peroneal nerve and the closure of the traumatic cavity afterward with closely inserted sutures, creates a mighty favorable field for sepsis, which in this particular instance was regarded as specially redoubtable. The only unguarded carrier of infection was the air of the operating room, which being constantly agitated by a number of spectators and the leading of horses to and fro continually during the operating hours, undoubtedly suspended abundance of dust. A ray of sunlight always reveals abundance of dust in ordinary rooms, unless special effort is previously made to allay it. In this case no such special precaution was taken, but since the subject affected with malignant œdema (at that time supposed to be septicæmia) had only been in the operating room a short time, it is very evident that the air could not possibly have been the contaminating medium. The hands of both the surgeon and the assistant were undoubtedly the actual carriers of the infection, because these had been covered with blood and secretions from the wound of the infected subject, and although well washed, with a full knowledge of the danger in this connection, the precaution was ineffectual. Hands, well soaked with blood and secretions from a hot-bed of virulent microbes, are always liable to carry infection immediately afterwards, no matter how thoroughly they have been cleansed.

These details are mentioned here to demonstrate the tenacity of the infection we are attempting to describe and the dangers of virulent infections generally.

Twenty-four hours after this subject had been submitted to the above-mentioned operation, a pronounced painful swelling appeared in the region. There was lameness, exceptional tenderness on palpation, an œdematous circle five inches in diame-

ter, and a fever of 103° Fahr. Suspecting that this complication was an infection from the supposed case of septicæmia, which by this time had been recognized as unmistakable malignant œdema, the wound was opened, laid bare, and irrigated with hydrogen peroxide, and the surrounding skin "button-holed" with numerous incisions to admit air into the subcutaneous tissues. The fever continued during the succeeding four days, instead of dropping to normal as in the case of ordinary septic states following new wounds; there were slight colicky symptoms manifested from time to time; and dejection and anorexia were pronounced. The patient recovered slowly during the next two weeks, but the local gangrene left behind a very refractory wound, which cicatrized very slowly during the next two months.

Although there was no bacteriological diagnosis made in any of these four cases, the correctness of the diagnosis in the first there cannot be refuted. Malignant œdema has characteristic features which readily identify it from any of the other acute, spreading, fatal wound diseases. In these three cases the characteristic features were in evidence. The diagnosis of the last case might be questioned, because the pathognomonic symptoms (emphysema) was wanting, but this might easily be explained by the prompt treatment administered. The obstinate general symptoms and the gangrene of the wounded tissues, identify it from ordinary phlegmons.

SECOND OUTBREAK.—The second outbreak occurred during December, 1906, in a small country village in the State of Iowa. In this instance, three horses submitted to caudal myotomy, were the victims. The operations were performed in the stable by a skilful veterinarian, who, in describing the history of the unfortunate event to the writer, on the scene at the time of the outbreak, stated, that in view of the high value of the horses, more than ordinary pains had been taken to perform the operations in obedience to the dictates of aseptic surgery. The tails were well washed with a strong antiseptic solution, and the tenotome, previously sterilized, was kept in ethyl alcohol between operating intervals.

These animals were "placed in the pulleys" with exceptionally heavy weights during the ten days following the operations. Two twelve-pound window weights were used for each horse, and the "pulleying" was continued incessantly for ten days, day and night. About the fourth day the seats of operation became painful, somewhat swollen and discharged a

hæmorrhagic pus in considerable quantities. The treatment of this complication was undertaken by the stable attendants. The small wounds were syringed with liberal amounts of a solution of creolin and water from a rather dirty stable bucket, which was also used to wash off the pus that accumulated around the surgical wounds. About twelve days after the operations three horses out of a total of four operated upon, fell seriously ill and began showing symptoms of malignant œdema, the exact nature of which was promptly recognized by the veterinarian called upon to administer treatment. The treatment consisted of free incision of the œdematous areas and liberal irrigations with hydrogen peroxide. Of these three horses, one died and two recovered, thanks to the promptness of the treatment.

GRIGOROFF, in *La Presse Medicale* for Dec. 19, states that he has produced a vaccine from the bodies of tubercle bacilli which he has found experimentally to immunize animals against tuberculosis.

GUARDING THE UNITED STATES AGAINST SURRA.—*Washington, Jan. 27.*—The Agricultural Department has just overruled the military department of the Government, and as a result Gen. Leonard Wood will not be permitted to bring back from the Philippines into the United States when he returns his favorite riding horse and his much prized dogs. The General expects to return soon and desired to send the animals ahead. Secretary Wilson is taking extraordinary precautions to guard against the introduction into the United States of surra, a disease quite common among live stock in the Philippines. The bacillus of surra is described as a snakelike creature that multiplies rapidly and the disease germs are transmitted most commonly by flies. The Agricultural Department holds, therefore, that an examination and clean certificates at the port of departure in the Philippines is not a sufficient safeguard against the introduction of the disease, for flies may infect the animal after it is on board the steamer. Gen. Wood has yielded, after some reluctance, to the Secretary of Agriculture. Not long ago the wife of an army officer returning from the Philippines tried to bring in a pet dog. The animal was turned back at the port of San Francisco, and later a secret attempt was made to enter the animal by the Canadian border, but the vigilant agents of Secretary Wilson, on the lookout ever for surra bacilli, apprehended the tabooed canine and branded him with the figures "23," regardless of womanly sobs.—(*New York Sun.*)

ARMY VETERINARY DEPARTMENT.

ACCEPT THE ARMY VETERINARY BILL AS IT STANDS.

CAMP STATSENBURG, P. I., December 14, 1906.

Editors American Veterinary Review:

DEAR SIRS:—I have just received the November issue of the REVIEW and hasten to state that I fully agree with Dr. Jewell to accept the Army Veterinary Bill as it stands, and to beware of amendments. Nothing else is likely to endanger its passage. Yet, we have in the Army one or two past-masters in the art of tacking cloudy amendments on clear-sky bills, and samples of them are contained in all our veterinary bills passed so far. They read about this way: "Provided, further, that the veterinarians of Class A be exempted from provision X." When Class A was looked up, there was *only one* veterinarian in it, and he would tell with a twitch in his eye: "Me and my political friends did it." Somebody has already been tinkering with the bill, because there are too many "provided" in it to be an original draft, and these provisos provide pretty well for the colleagues of over 15 years' service, some of whom have not yet reached middle age, while others of just less that length of service and past 50 years of age have to stand still another examination, and "if they don't pass it or refuse to take it, they shall be dismissed the service with three months' pay." Who does not scent in this a little of "promotion by selection, promotion by elimination, promotion by—"well these things are in the air just now in the army and we might as well take our dose of it.

But, with all, the Bill as it stands contains all that we can expect collectively at this time. We should all understand that it is but a stepping stone for further legislation, and the study of the language used clearly indicates that it is a compromise between those that wanted to do something and those that wanted to do nothing. Let us get this stepping stone first, even if it looks a little slippery.

But in justice to the majority, Dr. Jewell, rally around you all those good army colleagues who are so fortunate to be in the States at this time, and stop this nefarious practice of the amendment-jugglers, and make them understand that their absence from Washington will be much appreciated even in the Philippines.

OLOF SCHWARZKOPF.

CORRESPONDENCE.

THE PASTEUR VACCINE CO. SETS ITSELF RIGHT.

NEW YORK, Feb. 8, 1907.

Editors American Veterinary Review:

DEAR SIRS:—Our attention having been called to assertions made to members of the veterinary profession, with evident intent to discredit our products, we ask you to publish the enclosed in editorial form.

Very truly yours,
PASTEUR VACCINE CO., Limited.

* * *

The Pasteur Vaccine Co., Ltd., 7 Rue Meyerbeer, Paris, France, and 80 Lombard St., London, England, with branches in New York at 366–368 West 11th St., and in Chicago at 441–445 Wabash Ave., resent assertions said to have been made to some of the leading members of the veterinary profession.

The Pasteur Vaccine Co. are the sole Concessionaires of the celebrated Institut Pasteur, Paris, France. This is a plain statement of fact and the Veterinary Serums and Vaccines of the Institut Pasteur are brought to the profession through this company alone.

These Vaccines and Serums are:

Pasteur Anthrax or Charbon Vaccine, successfully used since 1882 upon more than 40,000,000 animals in all parts of the world. Made by scientists who coöperated with Pasteur in his discovery of Anthrax Vaccine; also Antistreptococcic Serum, Antitetanic Serum, Mallein and Tuberculin.

The various forms of Blackleg Vaccine, powder, cord and pellet, are also exclusively marketed by the Pasteur Vaccine Co., and have been successfully used since 1884 on over 36,000,000 calves.

These Blackleg Vaccines are produced for the Pasteur Vaccine Co. by the discoverers, Profs. Arloing, Cornevin and Thomas, and were introduced into the United States in 1895.

The facts in the case are so plain, and have been so often plainly stated, that it is almost incredible that any one should assert or believe anything to the contrary.

TREATMENT OF ECZEMA.

CAMPBELLFORD, ONTARIO, Jan. 26, 1907.

Editors American Veterinary Review:

DEAR SIRS:—I was interested in reading the article on "Eczema" in the January number, *re* "Sysonby," by Dr. William Sheppard. I have had several cases of somewhat that nature in my practice, and for years I worried over them until I fell into the line of treatment given below, and from which I have uniformly good results. I do not state that it will always make a cure, but the results are such that it is surely worthy of a trial by practitioners.

Prepare the animal for a purge (and in my locality I give aloes barb., 10 dr., calomel, 6-8 gr.—though I find that localities differ in reference to cathartics). Then apply locally potas ium hydrate in solution, 2 dr.; corrosive sublimate, $7\frac{3}{10}$ gr.; citric acid, $3\frac{2}{5}$ gr.; creolin, 1 oz.; nebulin, 4 oz.; aqua puris, q. s. *ad* 8 oz. Rub well in wherever affected and repeat in two days. The first application should be washed off with castile soap and rain water before the second one is applied. Usually the second application will cure ordinary cases.

Yours respectfully, G. A. HAY, V. S.

THE report of the New York Zoölogical Society for 1905 shows that there were then in the park 624 mammals, 687 reptiles, 1,560 birds, making a total of 2,871 specimens, representing 656 species.

NEW YORK ALUMNI IN CHICAGO.—On Friday evening, January 18, the alumni of the N. Y. State Veterinary College, residing in Chicago, were entertained at the home of Dr. Andrew English, 5413 Jackson Ave. The following alumni were present: M. L. Davenport, '03; A. English, '05; R. J. Stafford, '06; F. L. Foster, '06; E. W. Little, '06; W. Nelligan, '06; L. T. Giltner, '06; W. Treman, '05; A. E. Merry, '06.

INSPECTION OF CATTLE AND MEAT IN PHILADELPHIA.—Dr. A. G. Schreiber, in his annual report to Dr. A. C. Abbott, chief of the Bureau of Health of Philadelphia, shows that during the past year his division had inspected 152 slaughter houses, most of which were found in a fair condition; made 39,044 inspections of dressed meats; condemned 337,695 pounds of meat; inspected 56,986 living animals; inspected 21,269 carcasses, of which 562 were condemned; and brought fifteen prosecutions, with fifteen persons held for court.

THE VETERINARIAN IN POETRY.*

By GEORGE G. VAN MATER, M. D., D. V. S., Brooklyn, N. Y.

(Air: "Soldier and Sailor, Too." With apologies to Mr. Rudyard Kipling.)

As I was going 'ome to bed,
Through a muddy country lane,
I seen a chap in a cravenette, a trudgin' through the rain,
'E 'adn't a match an 's pipe was out,
An' I ses to 'im 'Oo are you?
An' 'e ses I'm a Vet, a common Vet,
Half horse an' half human, too.
Now 'e never gits paid for half he does,
An' 'e does the work of two,
An' 'e isn't one of the gentle folks,
An' 'e ain't like me nor you,
'E's a sort of a bloomin' chameleo type,
Half cow an' half human, too.

An' I seen 'im again all over the shop,
A playin' all sorts of rags,
Like settin' a fractured maxilla
With a couple of touch line flags.
An' Fifth Avenue owes 'im money,
For they gives 'im work to do.
Though 'e's only the Vet, the common Vet,
Half goat an' half human, too.
An' the quarantine board they sits on 'im,
An' tries to dock 'is screw,
Though 'E 'as 'is bread and cheese to git,
The same as me or you.
They think 'e's a haughty philantocrat,
Half dog an' half human, too.

An' I seen 'im again with a knife, an' things,
An' the sweat was on 'is brow,
'E was trying to mend the guts of a cat
As 'ad spiked 'imself in a row;
'Twas late at night, an' 'e 'adn't no light
To see what 'e 'ad to do,
An' 'is pal was a Vet, a common Vet,
Half lamb an' half human, too.
'E 'adn't got far with 'is little job,
'E wasn't but half way through
When the cat gits up an' goes off for a drink,
The same as it might be you.
Ho! they ain't no special anæsthetues,
Half cat an' half human, too.

But there weren't no call to do as you done
When your canary bird was low,

* Read at Annual Banquet of the New York-American Veterinary College, 1906.

An' you fetched 'im out in the dead of night
An' 'e 'ad six miles to go.
For 'e 'ad it before, an' 'e 'ave it again,
An' you knew just what to do,
You didn't want the poor old Vet,
Half bird an' half human, too.
You pays 'im? What? A couple of bones!
An' your earnin' thirty-two;
An' *E'* 'as to suscribe to *your* trottin' club,
Which you're too mean to do,
Because 'e's the Vet, the common Vet,
Half bull an' half human, too.

Now I never believes in them specialist thieves
What stammer and grunt and blow,
As'll watch your horse die, with a winkin' eye,
For a hundred dollar or so,
An' when its "not at once; I'll call over soon"
Which I 'opes it won't be for you!
Let's stick to the Vet, the all-around Vet,
All *man* and whole hearted, too,
An' when we come to the bar of Gawd,
An' 'E says 'Oo out'er hell are you?
(For 'E hates peculiar people an' the Christian Science crew)
Just say I'm a Vet, a common Vet,
All Man and all Human, too.

DR. S. H. CALDWELL, veterinarian to the U. S. Government, stationed in the Panama Canal Zone, spent December and January in Chicago.

THERE is an unsupplied demand for veterinary assistants in New York State, and a number of openings for brilliant young men as teachers at various points.

"THE ORACLE," of the New York *Sunday Herald*, answering the query, "Which should be considered the greatest profession, law, medicine, or theology?" answers: "Medicine, for in it the desire for the exact facts is supreme; while in the others there is a desire to support preconceived views."

THE testimony being taken by the contending factions in the celebrated suit of the stockmen of the Deer Lodge Valley, Montana, against the Anaconda mine owners is most exhaustive. We are told that Dr. D. E. Salmon, who has been on the ground studying conditions on behalf of the stockmen for many months, was on the witness stand for sixteen consecutive days in January, fourteen of which he was under cross examination by the lawyers of the mine owners. Dr. Pearson was on the rack for five days on behalf of the mines.

OBITUARY.

ARTHUR O'SHEA, D. V. S.

The hopeful item published in the January REVIEW to the effect that Dr. O'Shea was believed to be a safe convalescent from pneumonia proved delusive, for soon after the first of the year complications began to develop, and a subdued case of Bright's disease was kindled into activity, paralysis showing in his extremities, and he rapidly failed, the end coming on January 29.

Dr. O'Shea was about forty-seven years old, and unmarried. He graduated from Columbia Veterinary College in 1884, and at once began practice in New York City, where his father had preceded him for many years, and which he continued for about twenty years, when he was appointed through civil service as veterinarian to the Street Cleaning Department, in whose service he remained at the time of his death, being stationed in Brooklyn. While one of thirteen children, he was the last living member of his immediate family.

Dr. O'Shea was a loyal veterinarian, true to the best impulses of professional probity, jealous of his profession's reputation, and ever ready to serve her or any one who labored in her ranks. As an associationist, he was of the kind that get at the wheel and do things. The profession of New York State has good cause to gratefully remember the deceased, for it was through his almost single-handed efforts that the bill exempting veterinarians from jury service was successfully piloted through the Legislature, in the face of much opposition. He made many trips to Albany and remained there for days at a time to untangle knots and keep it moving. We remember with what enthusiasm he announced that the Governor had affixed his name to the sovereign law which would forever relieve members of the profession from the onerous duties of the jury box. More than a month after its passage it was found that some one had tampered with the bill in committee, and it was inoperative for the counties of New York and Kings, the very section which had sought the amendment. O'Shea at once renewed the fight, bringing to his aid some powerful influences in New York City, and he never rested until the objectionable proviso was wiped out; and veterinarians have been enjoying jury immunity ever since.

He was a charter member of the Veterinary Medical Asso-

ciation of New York County, always serving upon its Judiciary Committee, and a large delegation from that Association attended the funeral and laid a wreath of beautiful flowers upon his coffin in loving tribute to the esteem in which their dead comrade was held. He was also a member of the New York State Veterinary Medical Society. Dr. O'Shea was an ardent Democrat, and was many years a prominent member of the T. D. Sullivan Association, which practically took charge of the funeral arrangements.

BIBLIOGRAPHY.

VETERINARY MATERIA MEDICA AND THERAPEUTICS. By Kenelm Winslow, M. D., M. D. V., B. A. S (Harv.) Formerly Assistant Professor of Therapeutics Veterinary School of Harvard University, etc. Fourth Edition, revised. New York: W. R. Jenkins, 851-853 Sixth Avenue 1906.

Dr. Winslow has the commendable quality of keeping his excellent text-book on Materia Medica up to date. The fact that it has been adopted by the schools of America as the standard in their class-rooms has made the demand for it very large, and ordinary editions are quickly exhausted. Instead of simply printing more books to meet the call for them, the author goes carefully over the work when a new edition is demanded and brings everything right up to the condition of knowledge of the times. In the case of the fourth edition, considerable revision was made necessary on account of the many changes in the new Pharmacopœia, and in consequence there have been made 123 additions, 106 changes in the strength of preparations, and 139 changes in the official title of drugs. The Index has also been rendered more valuable by making it a pronouncing vocabulary, and in every department it shows that it means to maintain the position which it has won on its merits—the standard of veterinary therapeutic education in the English language.

The publisher is also entitled to the support of the profession by his liberality and enterprise.

A COLLIE DOG was recently said to have traveled 1500 miles to reach his mistress, who had left him behind when she moved from Duluth, Minn., to The Dalles, Oregon, guiding himself solely by instinct, as he had never been over the route before, and was entirely unattended.

SOCIETY MEETINGS.

INDIANA STATE VETERINARY ASSOCIATION.

The Association was called to order Jan. 3, at 1.30 P. M., by the President, Dr. W. B. Craig, of Indianapolis.

Roll-call was answered by eighty-three, and there were sixty visitors, nearly all graduates.

Minutes of previous meeting were read and approved.

The Secretary's report showed receipts of $47 back dues, with expenditures of $32.20, leaving a balance of $14.80 turned over to the Treasurer. On motion report was referred to the Auditing Committee, consisting of Drs. I. D. Rynearson, J. G. Heighway and H. A. Miller, who reported accounts correct.

While waiting for the Treasurer's report, Dr. J. S. Rodger, of Anderson, on behalf of the Indiana Veterinary College, invited all graduates present to report for banquet at Hotel English at 7 P. M.

The Treasurer's report was read and showed a balance on hand of $234.17 on January 3, 1907. Accepted as read.

The order of business was changed by consent and new members admitted as follows: Drs. Frank H. Riester, Salem; Wm. F. Price, Milford; T. M. Hall, Thorntown; Wm. H. Heaton, Broad Ripple; Fletcher E. Lawton, Greencastle; Alex. L. Marvel, Owensville; Frank Osborne, Petersburg; John H. Snyder, New Harmony; Frank L. Gardner, Indianapolis; Ira G. Winsett, Christman, Ill.; Jarvin S. Crabtree, Paris, Ill.

Committee on By-laws reported progress and asked an extension of time. Granted.

The election of officers resulted as follows:

President—Dr. J. B. Archer, Spencer.

Vice-President—Dr. W. A. Dryden, Columbus.

Secretary—Dr. E. M. Bronson, Indianapolis.

Treasurer—Dr. J. W. Klotz, Noblesville.

Board of Censors—Drs. J. C. Rodger, Anderson; F. W. Anderman, Hartford City, and F. A. Bolser, Newcastle.

The President appointed the following committees:

Program—Drs. G. H. Roberts and F. H. Davis, Indianapolis.

Entertainment—Drs. W. B. Craig and F. A. Mueller, Indianapolis; and J. W. Klotz, of Noblesville.

PAPERS AND DISCUSSIONS.

Dr. H. A. Read's paper on "Pathology and Treatment of Navicular Disease—My Experience."

It proved so practical and full of good advice to the young practitioner especially, that the Doctor was given a rising vote of thanks.

Dr. Klotz: Do you use anæsthetics in your neurectomy, and, if any, local or general?

Dr Read: I do not use any.

Dr. Klotz: What operation is preferred? what per cent. successful?

Dr. Read: Low or plantar; 7 to 8 per cent.

Dr. Klotz: In draft horses, how long will they hold up on high operation?

Dr. Read: Have had them go down in one-half hour, but if they stand long enough, about six weeks to heal, they stand up for good.

Dr. Klotz: Then you have the good results with the low operation?

Dr. Read: Nothing but good results, but most of my subjects have been middle-weight class horses, not draft or speed.

Dr. Klotz: What are your results from high neurectomy for side and ringbones?

Dr. Read: Bad; I consider it dangerous.

Dr. Axby: I have performed high neurectomy behind for nail pricks and ringbones and have lost no feet in all the cases. I have been able to keep track of at least one of them for four years. There is one that I know of that has been done for seven years.

Dr. Davis: What brings about the condition known as navicular disease?

Dr. Read: Peculiarity of constitution brought about by breeding mostly, and some have no known cause. I believe it is the bane of horseflesh to-day.

Dr. Davis: What per cent. of neuromas do you have?

Dr. Read: I always had them at first.

Dr. Davis: So did I.

Dr. Craig: My experience same as Dr. Axby. Some race-horses are run next day. Low operation for navicular disease is O. K. Any sore horse use low; less cocaine for me the better; no high operation and a flat foot for me. Don't pull nerve down, but cut high as possible and take off the lower end.

Dr. F. H. Davis' Paper: "Fever and Its Treatment."

Dr. Rynearson: I have tried to cut aconite out of my practice, but cannot find anything as good; I cannot use veratrum veride.

Dr. Davis: Use gelsemium and bryonia.

Dr. Craig: What about nitrate of potash? I would rather have it than any of the others, speaking of "Shipping Fever."

Dr. Davis: A systemic disturbance is the condition, and I treat the nervous system by using gelsemium, and it brings the animal around quicker than potash for me.

Dr. Craig: If the nervous system is upset, why?

Dr. Davis: I think aside from some cases of infection the temperature is caused from excitement, hysteria, etc.

Dr. Archer: Why have you fallen out with acetanilid?

Dr. Davis: Next day, with acetanilid, bad eyes and pulse for me.

In a report by the State Secretary of the A. V. M. A., Dr. G. H. Roberts, we were told that this was far too good a society for us not to be included in its membership. He pointed to the fact that not only was the cream of the United States there, but eminent men connected with foreign institutions, such as Pasteur, were there to share with us their knowledge. Indications are that the Doctor's talk will bear fruit for the association of veterinarians foremost in America.

Dr. Klotz made a motion, seconded by Dr. Gurley, which was carried with a rush, that wives and sweethearts be invited to our next meeting.

Dr. J. E. Pritchard was declared an honorary member.

It being 5.30 and our banquet occurring at 7 P. M., we adjourned.

BANQUET AT HOTEL ENGLISH, 7 P. M. JANUARY 3.

Seventy-eight were seated and enjoyed the bounteous hospitality of the Indiana Veterinary College until 9.30, when the cigars were passed and we were led in witty sallies by Toastmaster J. C. Rodger, of Anderson. Among the speakers were: Dr. A. S. Jaeger, Indianapolis; Dr. J. D. McLeay, Indianapolis; Dr. Samuel Crose, Indianapolis; Dr. Frank Davis, Indianapolis; Dr. W. B. Craig, Indianapolis; Dr. Ferd. A. Mueller, Indianapolis; Dr. Walter Sharp, Indianapolis; Dr. J. L. Axby, Lawrenceburg; Dr. H. E. Titus, Lafayette; Dr. A. P. Carter, Covington; Dr. T. M. Hall, Thorntown; Dr. Axby, Harrison, Ohio; Dr. J. G. Whitestine, Huntington; Dr. F. W. Ander-

man, Hartford City, whose subjects were: The failure of the Board of Health to recognize the veterinary profession; need of veterinary supervision over meat markets; dairy products; the campaigning against the uneducated, so-called veterinary, etc. The principal train of thought was the elevation of the profession principally by education, also asking for legislation to insure that all future practitioners entering Indiana must be men of ability.

The President of the Ohio Veterinary Association was present, made a pleasing short talk and invited us to join with them and the Kentucky Veterinary Association and have a tri-state meet next summer.

On motion of Drs. Bronson and Davis, a committee was appointed to correspond with the Secretary of the two state associations looking toward the meet suggested by Dr. Axby; the Chair appointed Drs. Roberts, Craig and Bronson.

Adjourned at 11.30 to meet at the Indiana Veterinary College at 9.30 A. M., January 4, for continuance of program and clinics.

CLINICS.

Double tenotomy on an 18 months old colt; operation standing, no confinement; local anæsthetic, stovaine. Operator, J. W. Klotz, Noblesville.

H. E. Titus, of Lafayette, reopened two dogs that he had operated on for appendicitis, one on December 8 and the other on December 18, 1906. Internal ligatures used by the Doctor were of No. 20 linen thread. The results of the operation were highly satisfactory. Sutures had been carried into intestinal canal ready to be expelled.

Dr. G. H. Roberts brought in a live subject of acute glanders which had been injected with mallein and showed temperature of 104½ and at point of injection a swelling of five inches in diameter. Subject was killed and the post-mortem was shown, also smear slides made by Bacteriologist McLeay, which were conclusive under microscope.

Operation for roaring, by J. W. Klotz, of Noblesville. Patient was prepared by inserting tracheotomy tube and injecting a 6 per cent. cocaine solution. Larynx opened by cutting through the thyroidean ligament and cartilage, separating cartilage through body of Pomum Adami. Inside of larynx, operation consisted of removing a large portion of the thyro-arytænoideus muscle and mucous membrane covering it. No sutures were used either externally or internally. Operator advised as after

treatment to allow tracheotomy tube to remain, thereby insuring perfect rest to larynx and wound during cicatrization. Complete recovery in large number of cases is usually expected at the end of eight or ten weeks. Operator objects to separating the cricoid cartilage in all cases where the age is under eight years, because of difficulty experienced by collapse of that cartilage in many of the younger horses operated on in the last year by the old method of removing the entire arytænoid cartilage and stitching the mucous membrane. This difficulty has never been obtained by the operator in separating the thyroid. This no doubt is due to the fact that the thyroid is an incomplete cartilage, while the cricoid is not sufficiently hardened in young horses; also it is the only complete cartilage of the larynx.

Periostotomy for spavin, by G. H. Roberts, of Indianapolis.

This completed the clinic, and we were called to order by President Archer to finish our program and unfinished business.

A bill was presented from J. J. Herron for $9.40 for affidavits furnished for prosecution of empiric St. Clair, of Atlanta. On motion of Drs. Roberts and Craig it was allowed, and an order on the legislative fund for the amount drawn.

Dr. R. A. Craig, of Lafayette, finished our literary program by giving a talk on "Cornstalk Disease." It developed the fact that a great many of the so-called diagnoses may prove to be hæmorrhagic septicæmia or caused from toxic substances.

Dr. Carter: What do you call the disease we have had among cattle in Indiana for the last two years?

Dr. Craig: Has no proper name.

Dr. Carter: Out of 500 cases in last two years I've named it autointoxication. I've found a condition in shuck and stem that has in them a sappy substance. Out of those I treated lost about 1 per cent. Herds not treated lost about 30 per cent.

Dr. Craig: Send us some of those stems and we will investigate. Peters has found prussic acid in sorghum.

Dr. Davis: In 1899, in Illinois, we had a lot of supposed cornstalk disease and it occurred after two weeks in the field; horses were affected and showed symptoms of cerebro-spinal meningitis.

Dr. Craig: That's the form it takes in the West. It is not from germs, but toxic substance; sorghum stunted or second growth will show prussic acid.

Dr. Archer: Would curing have any effect on the prussic acid formation?

Dr. Craig: No; it's the peculiarity of growth of sorghum that has to do with the formation.

Meeting adjourned at 1.15 P. M.

E. M. BRONSON, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The February meeting was called to order at 8.30 P. M. on the 6th, in the lecture-room of the New York-American Veterinary College, with the President, Dr. Roscoe R. Bell, presiding.

That the program for the meeting was sufficiently attractive was well evidenced by the large number of members and visitors who were present. Among the out-of-town veterinarians were Drs. Pearson and Weber, Pennsylvania; Loblein, New Jersey; Hollingworth, Utica, N. Y.; Devine, Goshen, N. Y.

The President called for Dr. Silkman's paper on "The Diagnosis of Glanders in the Human Subject, from the Viewpoint of a Veterinarian," which was presented by Dr. Gill. This paper proved to be a very carefully prepared, complete and thoroughly scientific contribution. Dr. Silkman, as Veterinarian to the New York City Board of Health, has had excellent opportunities to study this disease; and that he has improved these facilities was evidenced by the efficient way in which the matter was presented. The Doctor produced an abundance of evidence to prove his contention that the disease of glanders in man was more prevalent than is generally supposed, and that the condition has undoubtedly been confounded with other diseases, as typhoid fever, and general pyemia. It is hoped that Dr. Silkman will give wide publicity to this paper, so that those who were not fortunate enough to be present at our meeting, will have an opportunity of reading it. [Dr. Silkman has promised to furnish a copy to the REVIEW for publication.—*Editor.*]

Dr. Leonard Pearson, Dean of the Veterinary Department of the University of Pennsylvania, was next introduced. Dr. Pearson explained that he had come direct from Washington, where he had met with the "Commission on Meat Inspection," recently appointed by Secretary Wilson to consider the revision of the meat inspection regulations of the Department of Agriculture, and that this matter had taken more of his time than he had expected it would, therefore he had not prepared as finished a paper on "Milk Hygiene" as he would like to have

presented to this Association. Dr. Pearson gave an extended address upon this subject, showing his great familiarity with it, and it is doubtful if any one present felt that more could have been added even if the Doctor had been able to spend more time in preparation. He called our attention to numerous outbreaks of typhoid fever which he had recently investigated, and to the fact that in order to insure a good milk supply, real inspection should be made at the dairies. To illustrate this point, the Doctor cited a recent outbreak of typhoid fever in a localized section of Philadelphia, which was directly traced to a contaminated spring in which the milk cans on a dairy farm were washed. This outbreak could have been avoided if the proper inspection had been carried out. Dr. Pearson also spoke on the advantages and disadvantages of pasteurization of milk. He contended that a high bacterial count in milk is not a sound indication that the milk is an unwholesome food, or that milk of a low bacterial count is necessarily pure and harmless. He pointed out that the former might contain a great number of harmless or non-pathogenic bacteria, while the latter might contain few but highly virulent ones. He believed that competent dairy inspection offered the best solution of the milk problem. That Dr. Pearson's remarks were greatly appreciated was apparent by the close attention given throughout the entire address.

Dr. Hollingworth, of Utica, and Dr. Ackerman discussed the subject. Dr. Pearson responded to several questions asked by members present.

Dr. Mangan's case report on the "Agglutination Test for Glanders," with post-mortem and pathological findings by Dr. Blair, was next called for. This proved to be a very interesting case, and, notwithstanding the lateness of the hour, this paper precipitated a lively and interesting discussion, Drs. Gill, Berns, Kingston, Silkman, Mangan and others taking part. Dr. Gill produced the records of twelve cases which were subjected to mallein and also to the agglutination test, and which were later autopsied, showing in these cases that mallein was apparently a more reliable agent in the diagnosis of glanders than was the agglutination method.

Dr. Gill then presented the dog with a peculiar lesion of the iris, which was examined by many of the members. While the light facilities for examination were not good, it appeared from a cursory inspection that the dog, which is a toy bull terrier, fourteen years old, has progressive senile cataracts of both eyes,

and in dilating the pupil to the full extent in order to take in all the light possible, the pigment layer upon the posterior face of the iris has broken away from the margin at several points, permitting the gray lens to show through these openings.

The matter of the revision of our Constitution and By-Laws was brought up. It was pointed out that our Constitution might advantageously be much broadened in its scope. On motion, duly seconded and carried, the President was instructed to appoint a committee to revise the Constitution and By-Laws and report at the next meeting. The President appointed Drs. Mangan and Blair on this committee.

Drs. Clayton and Robertson, as a committee on resolutions, offered the following resolutions on the death of Dr. Arthur O'Shea, one of the Association's charter members:

"WHEREAS, It has pleased the Almighty to remove from our midst our late worthy and esteemed fellow-member, Dr. Arthur O'Shea; and

"WHEREAS, The relations long held by the deceased with the members of this Association render it proper that we should place upon our record our appreciation of him as a veterinarian, and his merits as a man; therefore,

"*Resolved*, That the very sad and sudden removal of such a man leaves a vacancy that will be deeply realized by the members of the profession, and that we deplore the loss of Dr. Arthur O'Shea, with deep feelings of regret; and be it

"*Resolved*, That this resolution be spread in full upon the records of this Association and a copy forwarded to the AMERICAN VETERINARY REVIEW for publication.

[Signed] Chas. E. Clayton, J. L. Robertson, } *Committee.*"

President Bell announced as a part of the program for the March meeting, a paper by Dr. Hollingworth, of Utica, on the subject, "What is Necessary to be Done to Improve Dairy Inspection in New York State?" a paper by Dr. G. H. Berns on the "Bayer Operation for Cartilaginous Quittor," and one by Dr. E. A. A. Grange on "Artificial Impregnation in Animals."

Dr. Richard H. Kingston was elected to membership.

The meeting adjourned at 11.30 P. M.

W. REID BLAIR, *Secretary.*

GEORGIA STATE VETERINARY ASSOCIATION.

The first regular semi-annual meeting was held in the Convention Parlor of the Kimball House, Atlanta, on December 21,

1906, being called to order at 3 P. M., by the President, Dr. Peter F. Bahnsen, of Americus. The following other members were present: Dr. T. E. Jago, Athens; Dr. W. A. Scott, Columbus; Dr. C. R. Jolly, Dr. H. C. Carnes, Dr. C. D. Coker, and Dr. A. C. Seacord, all of Atlanta; Dr. J. E. Miller, Gainesville; Prof. C. L. Willoughby, Experiment, Secretary.

The minutes of the organization meeting, October 17, were read and approved, after which the presidential address was delivered by Dr. Bahnsen, outlining the needs of the profession in Georgia, and giving much encouragement to members.

Upon report made by the Membership Committee and unanimous vote of the Association, five new members were admitted, as follows: Dr. J. R. Anderson, M. D. C., Macon, (Chicago, 1889); Dr. M. A. Morris, D. V. S., Savannah, (American, 1890); Dr. J. Homer Oliphant, M. D. C., Augusta, (Chicago, 1897); Dr. Edw. L. Fryer, Jr., V. S., Blakeley, (Ontario, 1902); and Dr. J. C. Schwencke, V. S., Thomasville, (Copenhagen, 1894). Drs. Fryer and Schwencke were present at the meeting and took part in the work, and also Dr. Chas. F. Dawson, State Veterinarian of Florida, from Jacksonville, by invitation of the Association.

The first report was on "Osteoporosis," by Dr. T. E. Jago, of Athens, who stated as his experience that the most satisfactory treatment was to turn subjects in pasture, and also doubted the prevalent idea that this disease was caused by deficiency of mineral salts in the food. The subject was earnestly discussed by nearly all members present, particularly Drs. Jolly and Dawson, the latter advancing the hypothesis that the disease may be due to bacteria and contagious. So much interest was shown that the discussion culminated in the appointment of Dr. A. C. Seacord, of Atlanta, as committeeman to collect records of cases and treatment from members and other sources, and make report of statistics at the next meeting.

Dr. W. A. Scott, of Columbus, read a paper on "Surgical Cleanliness and Antiseptics," advocating the suturing of wounds when possible, and attempt to secure healing by first intention. Some discussion followed, the experience of other members being that it was best to treat cuts as open wounds without sutures, securing healing by granulation.

Dr. P. F. Bahnsen took the floor, to read a paper on the subject of "Periodic Ophthalmia," reviewing the history and recent treatments of this disease. A recess was taken for supper until 8 P. M.

Upon assembling in the evening, with the members and

several visitors present, the first paper was by Dr. C. F. Dawson, of Jacksonville, Fla., on the subject of "The State Veterinarian; What He Is, and What He Ought To Be," giving the usual duties of such work and some personal experiences of the writer.

Capt. R. F. Wright, Assistant Commissioner of the Georgia State Department of Agriculture, an honorary member of the Association, spoke further on the needs of Georgia in protecting the health of live stock, and assured the support of his department in securing proper legislation.

Motion was passed for the appointment of a committee to prepare and take charge of needed legislation before the next General Assembly, and the committee was named as follows: Dr. H. C. Carnes, Atlanta (chairman), Dr. W. A. Scott, Columbus, and Dr. T. E. Jago, Athens, with the President and Secretary to act with the committee *ex-officio*.

A paper on "Tetanus," by Dr. W. E. Carnes, of Atlanta, was read by the Secretary, on account of the author being confined to bed at the time with a severe ankle sprain caused by a fall. From the discussion of the members, the majority seemed of the opinion that rest and quiet aided as much in the treatment of this disease as any medical treatment.

The Association adjourned for the day.

The session of the second day, December 22, was begun by a meeting of the Committee on Legislation in the State Capitol, for conference with the Commissioner of Agriculture, at which a law was framed to be presented at the summer session of the Legislature, providing for the appointment of a regular State Veterinarian, and defining his duties. It was also considered likely that a bill regulating the practice of veterinary medicine and creating an examining board might be introduced at the same time.

At 10 A. M. all members gathered at the hospital and stables of Dr. C. R. Jolly, at 15 Exchange Place, Atlanta, for clinical practice.

At noon the party repaired to the hospital of Drs. Carnes and Carnes, at 135 Marietta Street, where a number of other cases were presented for diagnosis and treatment.

At 2 P. M. the party attended dinner at the Manhattan Café, and between 3 and 4 P. M. assembled again in the Convention Room at the Kimball House. Motion was adopted to have the next meeting of the Association about July 4th, upon call of the President, to be held in Atlanta at such time as the Associa-

tion might assist with work before the Legislature. Resolutions of thanks for the help and advice of Dr. Dawson were passed, and Dr. Dawson voted an honorary member of the Association. Resolution of sympathy and condolence was passed referring to the accident to the Vice-President, Dr. W. E. Carnes.

At 4 P. M. the Association adjourned, and members dispersed on the afternoon trains for their homes, pronouncing the meeting highly successful and interesting, very profitable from interchange of views and experiences.

C. L. WILLOUGHBY, *Secretary.*

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

The tenth annual meeting was held in Masonic Temple, Rochester, N. Y., Thursday, Jan. 17, 1907, and was called to order at 11 o'clock. The following members responded to the roll-call: Drs. L. R. Webber, W. G. Dodds, O. B. French, J. H. Taylor, P. J. Johnson, A. Geo. Tegg, G. C. Kesler, Nelson N. Lefler, D. P. Webster, John Steiner, Warren E. Stocking, W. J. Payne, J. E. Smith, W. H. Salisbury, Carl Webber, F. D. Holford, H. S. Beebe, John W. Corrigan, William F. Woolston and Prof. W. L. Williams (honorary member). Visitors: Drs. W. L. Baker, Buffalo; William H. Mahony, Rochester; W. J. Johnston, Geneva.

After the routine business had been transacted, the following directors were elected: Drs. Beebe, Stocking, Tegg, Kesler, Payne, French, Webster, Taylor, Dodds, and Corrigan.

The following officers were elected:

President—Warren E. Stocking.

Vice-President—John W. Corrigan.

Secretary—J. H. Taylor.

Treasurer—A. Geo. Tegg.

The Treasurer reported cash on hand $93 93. The Secretary reported a membership of twenty-four in good standing, and the following were elected members: John O. Moore, Wilson; W. J. Johnston, Geneva; William H. Mahony, Rochester, and Newell D. Backus, Geneva.

The meeting then adjourned to the Rochester Club, where a dinner was given by the Association to all in attendance on the meeting.

The meeting was again called to order at 3 o'clock.

Dr. A. Geo. Tegg gave a very interesting talk on "Acute

Lymphangitis." Where the fever was high he had gotten unfavorable results from the use of cathartics, especially aloes; got best results from complete rest with the use of aconite, digitalis, nitrate of potash, with cooling lotions locally. Prof. Williams thought that, while we need not look for immediate results from the administration of aloes as a purgative, eserine and pilocarpine, which act immediately instead of to-morrow, would give good results. In his experience most of the cases resulted from an infected wound, which would require different treatment. There seemed to be a great difference of opinion in regard to the etiology of the disease, some claiming most of the cases are due to infection, others claiming the cause as derangement of the digestive apparatus, others to a debilitated condition of the system arising from and coming as a sequel to some febrile disease. All of this seemed to point to the fact that all of these cases can and do cause lymphangitis.

Dr. Warren E. Stocking then read a very interesting paper on the "Contagious Fevers of the Horse," giving a history of the different forms, tracing back several centuries. Here, too, there seemed to be great confusion, the members practicing in the city seeming to think all of the different forms and types are due to the same etiological factor, the different forms being produced by the influence of environment; while the men who practice in the country away from the horse markets recognize four distinct diseases or types. Prof. Williams had had both city and country practice; he had recognized the four types very distinctly in his country practice, but in the cities, especially along the line of horse markets, he found a mixed infection, which he very aptly termed "inflammatory hash." This paper brought out a spirited discussion, which had to be cut short at 5 o'clock to allow the members to catch their trains.

J. H. TAYLOR, *Secretary.*

KANSAS STATE VETERINARY MEDICAL ASSOCIATION.

The third annual meeting was held in Topeka, January 8–9, and there was a large attendance, while interest in the affairs of the profession was manifest. The session of Tuesday afternoon was pronounced the most interesting in the history of the Association. The old officers were all reëlected by acclamation. The Secretary objected to the policy of letting one set of members receive all the honors. But still, we all promised to do the

best we know for the welfare of the Association, and sincerely hope each member will cheerfully respond when called upon, thus helping the Secretary to keep up the high standard of the Association thus far attained.

After going through the regular business, a very interesting program was rendered. A committee on resolutions was appointed to draft a resolution and present it to the State Board of Health.

A short clinic was held at the hospital of Drs. Pritchard and Knisely, at 1117–1119 Kansas Avenue. The following cases were looked after:

1. Operation on gray horse for catarrh; trephining of superior maxillary sinus. Operation by Dr. H. S. Maxwell, of Salina.

2. Two mouths were "dressed" by power float by Dr. D. O. Knisely.

3. Subject for diagnosis: bay horse, partially paralyzed; no history to case. Diagnosis: result following malarial fever.

4. Subject for operation, but found to be merely a small suppurating point on inside quarter at the coronary band.

5. Acute indigestion. Passage of the stomach tube by Drs. Pritchard and Knisely. Results were good; animal placed in box stall; no medicinal treatment given.

6. Case of colic. One dose of eucalyptolin, ℥ ss, was given.

7. Subject shown where rumenotomy had been performed the day previous; subject doing nicely, and apparently no bad symptoms at all.

8. Operation for melanotic tumor on gray mare. Removal of tumor and dressed as an ordinary wound.

9. Mouth "dressed" with power float by Dr. Flanders, of Kansas City, Kansas.

WEDNESDAY AFTERNOON MEETING.

Dr. Rogers, of the Manhattan Veterinary College, and Dr. Kinsley, of the Kansas City Veterinary College, lead a very interesting discussion on tuberculosis, which brought out some valuable information.

Dr. Hobs, of Holton, reported a case of tetanus following nail puncture.

Dr. Frank McVeigh, of Kincaid, read a paper on "Castration," which brought out a lengthy discussion by Drs. Pritchard, Saunders, Burns, Maxwell, and Richards.

Dr. DeWolf reported a very interesting case of peritonitis.

Dr. Kinsley gave an entertaining talk on the differential diagnosis of lamenesses, which brought out a very animated discussion by Drs. Hadley, Maxwell, Kinsley, Pritchard, Richards, and Knisely.

Dr. Hadley reported a case of canker in the foot of a driving mare. Discussed by Drs. Knisely, Pritchard and Kinsley.

Dr. Kinsley, of the K. C. V. C., was very urgent with his request for the members to attend the Missouri Valley meeting at Kansas City, in February. He was promised a very large attendance, which we are anxious to see.

Dr. Schoenleber, State Veterinarian of Kansas and instructor at the Manhattan Veterinary College, was right on the floor at the right time asking for the fourth annual meeting to be held in Manhattan. A motion to that effect was made by Dr. Maxwell, and was unanimously carried. Schoenleber promised us something on the "Jumbo" order if we would acquiesce. So now, gentlemen, make ready for something grand in January, 1908, at Manhattan. HUGH S. MAXWELL, *Secretary.*

ALPHA PSI FRATERNITY.

Greek letter Fraternity, recently established, is already national in its scope.

Students of the College of Veterinary Medicine of the Ohio State University have perfected the organization of a National Veterinary Fraternity, to which only veterinary students are eligible to active membership, and alumni and men prominent in the profession to honorary membership.

The purpose of this fraternity is to promote a stronger bond between the veterinary colleges of the United States and Canada; to create a better feeling among the students of all veterinary colleges, and to infuse a deeper interest in the study of veterinary medicine.

The Alpha Chapter has been established at the Ohio State University, and the Veterinary Faculty, Dean White, Drs. Sisson, Brumley, Udall, Fitzgerald and Gay were received as honorary members.

Inaugural and formal installation ceremonies took place Friday night, Jan. 18th, followed by a banquet at the Northern Hotel.

The members of the National Council are S. W. Brown, President; A. F. Schalk, Vice-President; L. M. Steckel, Secretary; G. W. Gillie, Treasurer. LEO M. STECKEL, *Secretary.*

NORTH DAKOTA VETERINARY ASSOCIATION.

The annual meeting convened in the recitation room of the Veterinary Department of the Agricultural College at Fargo, January 15, 1907, when the following members responded to the roll-call :—J. Burton, Wheaton, Minn.; J. B. Campbell, Larimore, N. D.; W. F. Crewe, Devil's Lake, N. D.; E. J. Davidson, Grand Forks, N. D.; J. M. Douglas, Hendrum, Minn.; J. W. Dunham, Fargo, N. D.; D. Fisher, Grandin, N. D.; G. D. Fisher, Hope, N. D.; W. J. Grady, Hendrum, Minn.; C. H. Martin, Valley City, N. D.; S. P. Smith, Cando, N. D.; W. S. Stinson, Grafton, N. D.; B. C. Taylor, Hillsboro, N. D.; L. Van Es, Agricultural College, N. D.; A. A. Walker, Casselton, N. D.

Visitors :—Drs. Ward, Beebe and Donaldson, Minnesota; Dr. M. Holcomb, Fargo, N. D., and Dr. Glynn, of the B. A. I.

The reports of the following committees were read and adopted: Resolutions, Program, Prosecutions, Legislation and Finance.

A communication from Dr. Sylvester, of the State Examining Board, was read, giving an account of the improved condition of the Board since its reorganization.

The names of Dr. F. L. Cussock, Carrington, N. D., and of Dr. W. S. Stinson, Grafton, N. D., were presented for membership, and were unanimously elected.

Dr. Walker called attention to the inadequacy of the present sanitary laws and elicited a general discussion of the subject, by which it became apparent that all members fully agreed on the great need of better sanitary measures. As a result of the discussion a committee, consisting of Drs. J. W. Robinson, R. H. Treacy, and A. A. Walker, was appointed and instructed to make the required efforts to secure the passage of a bill providing for the establishment of a State Live Stock Sanitary Board.

Dr. Van Es made a motion, seconded by Dr. D. Fisher, that a committee be appointed to submit suitable resolutions on the occasion of the death of Professor Thomassen, of Utrecht. The motion carried, and as members of this committee were appointed Drs. Van Es, Crewe, and Walker.

The following were the officers elected for the ensuing year:

President—W. F. Crewe, Devil's Lake.

Vice President—A. A. Walker, Casselton.

Secretary—C. H. Martin, Valley City.

Treasurer—B. C. Taylor, Hillsboro.

The following papers were read:

"Treatment of Fistulous Withers and Poll-Evil," by G. D. Fisher, Hope, N. D. Discussion by Drs. Martin, Crewe, Walker, Davidson and Van Es.

"Municipal Meat and Milk Inspection," by Dr. J. W. Dunham, Fargo. Discussed by all members present.

"Cerebro-spinal Meningitis," by Dr. C. H. Martin, Valley City. Discussed by all present.

"Swamp Fever," by Dr. E. J. Davidson, Grand Forks. Discussed by Drs. Van Es, Ward and Beebe, and supplemented by an exhibition of photographs and clinical charts by Dr. Van Es.

After the reading of the papers, Dr. Van Es discussed the tuberculin and mallein tests and their relation to veterinary practice. He pointed out the desirability of a uniform method of applying the tests and interpreting the results, and spoke of the advisability of a uniform schedule of fees for the work. This topic was thoroughly discussed by Drs. Ward, Stinson, Walker and Davidson, and as a result the appointment of two committees was authorized, one to formulate methods of testing and interpreting and another to draw a schedule of fees for this work.

The meeting then adjourned until the following day after the clinics.

The clinics were held at the Stock-Judging Pavilion of the Agricultural College, and the following cases were presented:

Removal of keloid, by Dr. S. P. Smith.

Cunean tenotomy and cautery for spavin, by Dr. Van Es.

Operation for poll-evil, by Dr. Fisher.

Cautery for tendo-vaginitis, by Dr. H. Martin.

Plantar neurectomy, by Dr. Van Es.

Exhibition of locomotor ataxia, of suppurating bursa of fetlock, and of several cases of spavins, etc.

After the clinics the meeting was again called to order, with Dr. Crewe in the chair.

Dr. S. P. Smith read an interesting paper on a report of an operation on an hermaphrodite, which was discussed by all members present.

Dr. Smith also exhibited a tooth which he removed from the base of the ear of a colt and reported on the method of operation and its favorable results.

After a spirited discussion on the methods of handling communicable diseases, the Legislative Committee was instructed

to keep the Association informed through the Secretary of the progress of the proposed Live Stock Sanitary Board Bill, so that the members may individually urge their representatives to support the measure.

At the recommendation of the Committee on Resolutions, the following resolutions were adopted on the death of Prof. Thomassen:

"WHEREAS, The sad intelligence of the death of Professor Dr. M. H. J. P. Thomassen has been conveyed to us, and

"WHEREAS, His distinguished services for the advancement and development of veterinary science and the veterinary profession have been of inestimable value to the world; and,

"WHEREAS, The American veterinary profession and agriculturists have been greatly benefited by his labors. Be it, therefore,

"*Resolved*, That the North Dakota Veterinary Association express its sorrow at the occasion of this irreparable loss; and be it further

"*Resolved*, That these resolutions be spread upon the minutes of this Association, and that a copy thereof be forwarded to the bereaved family."

The following committees were then announced by President Crewe:

Finance—Smith, D. Fisher, and Stinson.

Program—Van Es, Campbell, and Martin.

Rules for the Use of Mallein and Tuberculin—Van Es, Davidson, and Dunham.

Fees for Mallein and Tuberculin Work—Stinson, Smith, and Campbell.

The meeting then adjourned. C. H. MARTIN, *Secretary*.

CENTRAL CANADA VETERINARY ASSOCIATION.

The fifth annual meeting was held at the Carnegie Library, Ottawa, on Monday, February 4th, 1907, at 8.30 P. M.

Present:—Drs. Rutherford, Higgins, Hilton, Harris, McNab, Hollingsworth, S. A. Walsh, Marshall, Beach, Higginson, Telmosse, Kenning, McGuire, Thacker, Haworth, Labrosse, Pallister, Lynche, Monk, Hadwen, McGill, James, and Young.

The minutes of previous meetings were adopted.

Dr. Dufresne (Laval '91) and Dr. F. A. Walsh (Ontario '06) were elected to membership.

The Secretary then read a letter received from Professor Williams *re* the *Veterinary Journal*.

The President then stated that it was the fifth annual meeting of the Association and that he was glad to welcome all present. The main object of the Association was, he said, to elevate the veterinary profession. He felt safe in saying that one of the most important subjects which would be touched on that night would be the good news in regard to veterinary legislation from Dr. Rutherford. The live-stock interests of the country were expanding, and much depended on the veterinarian. The transcontinental roads under construction, the lumbering in the country, and the immigration in the West, all created a great demand for horses, to say nothing of local demands, and that, therefore, times were prosperous. As veterinarians, they should devote much time to the judging of live stock, so that, when called upon, they could talk about judging, breeds, etc. He wished to thank all those to whose aid and coöperation the success of the meeting was due, particularly to their Hon. President, Dr. Rutherford, for his untiring and unselfish efforts to elevate the profession in Canada.

Dr. Rutherford then stated that it afforded him a very considerable degree of pleasure to be among them that evening, especially in view of the fact that, on the occasion of last year's annual meeting, he was seriously considering the advisability of becoming the occupant of a very limited block of real estate, something about six feet by two. However, owing to the earnest prayers of his friends, he had succeeded in pulling through so far. He supposed that those present were more interested in veterinary education than in any other subject. While he had to thank them very heartily for their kind motion of last year, he was also very grateful to them this year for antedating their meeting twice to meet the exigencies of his departmental work.

The matter of veterinary education, as dealt with that night, was left at the point where he had gone to Toronto on January 25th of last year, going a day or two earlier on his way South, to keep an appointment with Mr. J. W. Flavelle, the Chairman of the Committee appointed by the Ontario Government, to discuss matters in connection with the Ontario Veterinary College. At the meeting which resulted, Mr. Flavelle was present, as also Mr. Kilgour and Mr. C. C. James, the Deputy Minister of Agriculture, and he explained to them, as most present had heard him explain, the seriousness of the situation as far as it regarded the education of veterinarians in Canada, and the urgent necessity which, in his opinion, existed for some effective action being taken. The interview lasted some three hours, and dur-

ing that three hours Mr. Flavelle asked a number of questions which he did his best to answer; they went over the ground pretty thoroughly, with the result that, when Mr. Flavelle brought in, as Chairman, the report of the University Commission, they recommended that the Government should take over the College. They were all aware that they had a meeting in the fall of 1905, and waited upon the Hon. Nelson Monteith, that the Reorganization Committee, accompanied by Professor Smith himself, waited upon the Hon. Nelson Monteith. Previous to that, in June, 1905, he had taken the opportunity of having an interview with Mr. Monteith, so that he was fairly well prepared for the report of the Mr. Flavelle and his colleagues, and also fairly well prepared to take over the College. "Those of you who know Professor Smith, know that he does not like to be hurried, and he is going very slowly and deliberately. There is a little difference between him and the Government as to the price which he thinks the Government should pay him, and he is hanging fire, as it were. Those of you who have received the announcement of the College will know that there is at last the long looked for statement that students will have to go in for a three years' course. The Government is going to take the College over on about May 1st, 1908. Students who went in this year will be allowed to graduate as heretofore in two years. Students next fall, while going in under the auspices of Professor Smith and the present management of the College, will be entered for three years, whereas if the present arrangement is carried out, and I have not the slightest doubt that it will be, in 1908 they will have to pass a pretty strict matriculation, and would go through College in three years' graded courses laid down by the new Board appointed by the Department. The College will at that time be conducted as is the Agricultural College, that is, properly and regularly affiliated with the University. There is also a proposition that, in addition to the ordinary diploma, which will be given to the student who passes his different examinations, there will be further a University degree given for those who take another year, which I deem a very proper thing. I was a little disappointed at having to wait so long, after having, as it were, won the fight and seen the daystar spring from on high, that we would have to wait until 1908; but, after all, when I look to the time when I graduated in 1879, and remember that I had been waiting for improvement ever since, I thought that perhaps it was not so long after all, and that we should be thankful for small mercies.

"I have also another subject for congratulation. You will recollect that, some years ago, we had a meeting of the A. V. M. A. After a great deal of hustling to entertain our American cousins, and after paying all our debts, we had $109.50 left. It occurred to me that it would be a very nice little nest egg upon which to base an appeal for funds to the profession. When the troubles of the Committee who had collected the money were over, it was decided to hand it to the Ontario Veterinary Association, and at a meeting in Christmas, 1903, this was done. Ever since then the money has been accumulating. We had $650 in the Savings Bank drawing interest. We do not need it now for the purpose originally intended. Circumstances have rendered it unnecessary for us to take any action as private practitioners or as veterinarians generally, or through private members of the Legislature or in any other way. The Minister of Agriculture, the Hon. Nelson Monteith, himself has agreed to the Ontario Veterinary Association's demands and appreciates the importance of higher veterinary education, and to him we owe, I think, a debt of gratitude for the stand he has taken. I feel very much as I speak in this matter. We are relieved at once by the action of the Hon. Nelson Monteith, from any responsibility to secure legislation, and the various abortive measures which were previously obtained when this member and that sought to introduce bills to get legislation, and influence was brought to bear and lobbying was done, and the bills were thrown out. We will have a bill brought in by the Government itself. The College will be dealt with as a Government institution, and our little fund of $650 will therefore remain untouched. I may say that while the new Ontario Government deserves a certain amount of credit and consideration in connection with the subject on which I have been speaking, in other respects it has been less praiseworthy. Last year and the year before a person was elevated to the dignity of the veterinary profession by special Act of Parliament. The members of the veterinary profession did not appear to do anything, and last year when another man was made a veterinary surgeon by Act of Parliament there was the same thing. This year the same thing is going to be tried, and a man rejoicing in the name of Brisson, of the Township of Russell in the County of Russell, is petitioning the Legislature to be created a veterinary surgeon by special Act of Parliament. As soon as I received this information, and I may say that I knew nothing of the cases of last year and the year before, I notified our Secre-

tary here and I notified Dr. Sweetapple, the Secretary of the Ontario Veterinary Association. I have written several other letters, asked Dr. Sweetapple to take action immediately and call a meeting of the Reorganization Committee for this week. I received a letter to-day from him; he appears quite alive to the danger, but appears not to think it necessary to take such very prompt and energetic action as I suggested in my letter. I am going up to-night, and may be able to warm the Doctor up to-morrow morning and let him understand that we mean business.

"I have one thing more to lay before you, slightly different in character from those which have gone before, in relation to my Departmental work. Those of you who have received the various publications of our Branch will be in a position to know that we have not been idle: we have kept the pot boiling, and although it has occasionally boiled over in different parts of the country, we must expect a little trouble. We have had legislation before Parliament, the Meat Inspection Bill, which also provides for the inspection of vegetables, fruit and fish, but with those ingredients of the Irish stew we do not, as veterinarians, have much to do. We have no meat inspectors in Canada. As you know, it is best for a veterinarian to let the public think that there is nothing at all about animals that he does not know. You know how that is. Therefore, I speak plainly, and I may say that there are no meat inspectors in Canada that I know of. There may be here and there a veterinarian who has been a meat inspector. If so, I don't know him, and I know the great majority of the veterinarians in this country. There is a provision in this Act calling for an examination, which will be provided by the Governor in Council, but as he is liable to be busy, some of the rest of us will have something to do with the preparation of the examination papers. We are going to have an examination, and no man can be appointed an inspector under the Act without passing that. In order to enable veterinarians to pass that examination, it will be necessary for them to study. From forty to fifty meat inspectors will be required very shortly. We have, as you know, a very large staff of veterinarians engaged in dealing with outbreaks of contagious disease. In the last year we have sprung some. Five years ago we spent some sixty thousand dollars, while in the last fiscal year I got away with some four hundred and sixty-five thousand dollars of your money, and then was a little short. The work has very largely increased all over the country. These men, as you know, have

been appointed without examination, but after the new Meat Inspection Bill comes into force, I am inclined to think that the only way in which men will be able to enter the service of the Department will be through the examination provided by the Bill. The reason for that is this: When we engage men for service in the Department we do not propose to use them for any service for which they may be liable to be called on. When we start demanding an examination we will stick to it. I realize that there would be considerable difficulty in getting anything like the number of inspectors we want, properly trained in time. The salaries that we propose to pay are not large enough to tempt a man of mature years who has got himself established in practice and is in comfortable circumstances. They are, however, quite big enough and quite good enough for young men leaving college, especially if single, and would enable him to put by a little to start himself in practice later on. We propose to pay about $1200, and of course those salaries will be increased as the inspectors develop a knowledge and aptitude for their duties. The need of veterinary services in the inspection of food is constantly increasing throughout the civilized world. I may say that I have advocated for the last three or four years, the advisability of making provision for meat inspection, in view of the large and constantly increasing meat trade. You know it requires a good deal to move a Government, and until 'The Jungle' came along, as also the excitement in Chicago, and affected the trade for canned meat in England and Europe, the Government of Canada did not realize that it was necessary to take some action in the matter. Even then it was felt for a considerable time by those in control that we did not require it in Canada; our people were so thoroughly good and honest and careful of the health and well-being of their fellow creatures throughout the world, that there was little danger of diseased meat, or decomposed meat, or anything of that kind being packed in Canada. However, we began to find things not so good as they were supposed to be, with the result that the Meat Inspection Bill was introduced. It was introduced in December, and has now passed its third reading, and is going before the Senate in a day or two. We have no meat inspectors yet. As soon as I realized that we were really in for it, I took the matter up with Professor Smith, and endeavored by all the means in my power to get him to inaugurate a course of meat inspection through January, February and March. I also talked to the young men, pointing out the importance to

the Department and to the profession; but, while they agreed that it was important to the Department and to the profession, as also to them, I have not been able to get an answer. I have hopes. I am going up to-night, and may be able to get matters started in Toronto as early as possible and lasting as long as circumstances will permit. This course would be available for old graduates as well as those now at the College, and any veterinarian who feels like going in for a special course of meat inspection might, I think, be able to fit himself for the position of meat inspector; taking the examination, say in April or May next, and being appointed on his succeeding in passing. Any graduate of a recognized veterinary college can take the examination. I thought that I would bring this before this meeting so that there might be no misapprehension, and I will be glad to give any gentleman who may think of going in for the examination as much information as I possibly can liable to be of use to him. I have said all that I think I have to say, and unless anyone has any questions, I will now take my seat."

Mr. Young: You said that there was some six or seven hundred dollars that you were holding. What is to be done with it? I have subscribed to the fund, and if it were divided, should expect to get my share.

Dr. Rutherford: I think that, after everything is settled, and everything started, we should endeavor to make it up to one thousand dollars and establish a little scholarship at the College with it. Neither Mr. Young nor anyone else is hurt by the little which they contributed, and it would be very nice for the veterinarians of the Province to say: "Here are sixty or seventy dollars which would help a good student along and enable him to fit himself for the profession." It is only a small matter after all, and hardly worth while dividing it. I think the postage in such a case would take up quite a bit.

The President: I suppose, as a general practitioner, you would have to give that up entirely.

Dr. Rutherford: Oh, yes, not only in connection with meat inspection, but we are not now appointing veterinary inspectors who are private practitioners. The moment he becomes an inspector he has to give up his work. I refer, of course, to salaried inspectors. We have gentlemen like Dr. McGuire, or Dr. James, or Dr. Hollingsworth, as inspectors, who are paid only by fees, but when a man enters our salaried list, he has got to abandon his practice and become a public servant. Paying a salary to a practitioner is not advisable

either from a departmental or a professional point of view. We therefore take men entirely from practice, and if an inspector studies and looks up the specialties he has to deal with in the course of his work, his salary very soon begins to increase, and his services are recognized. We have quit entirely appointing practitioners, but we do not dismiss those we already have. We have a few relics of the old days which we do not dismiss, but we do not want any more.

Dr. Harris: I am sure, Mr. President and gentlemen, you have all listened very closely to what Dr. Rutherford has told you in regard to what has taken place—that is, about the Ontario Government taking over the College and establishing it on a better foundation. There is no doubt that Dr. Rutherford has done a great deal for the veterinarian in Canada (hear, hear), and I do not know any man who has done as much. He was not only the means of establishing the C. C. V. A., but was the means of bringing the Ontario Veterinary Association to life. I am sure, therefore, that there is no other man in Canada who could have done as much as Dr. Rutherford has. He has done it for the benefit of the practitioner. He is not depending upon practice now, and has helped to bring the profession together, and to bring it to the standing which it now has. I would like to move that a very hearty vote of thanks be tendered to Dr. Rutherford by this Association, for what he has done for the veterinary profession in Canada, and particularly for this Association. Seconded by Dr. Lynche. Carried.

Dr. Rutherford: I am sure I thank you very kindly for this freely expressed good will, and can only say that my efforts have been but a labor of love. I have never been anything else but a veterinarian, except for a short period of mental aberration, when I thought that I was likely to blossom forth as a statesman, a condition from which I shortly recovered. I have never been anything else, and for twenty-two years I was a veterinary practitioner, and therefore know the difficulties and troubles and hardships of a veterinarian, and that his lot is capable of a great deal of improvement. It has not been favorable in Canada, in fact very unfavorable. I think we are about to better it; I hope we are, I trust we are, and if I have been in the slightest degree instrumental in bringing about a better condition of affairs, as I said before, I am perfectly satisfied. At the same time, I thank you very sincerely for your kind expression.

The Secretary then read his reply to the letter received from

Professor Williams, as also a letter received from Dr. Roscoe Bell. He also stated that Dr. Rutherford had informed him that two members of the Dominion Parliament were veterinarians. He thereupon wrote to these gentlemen (Messrs. Walsh and Boyer), inviting them to the meeting. He had received no reply from Dr. Walsh, but a cordial letter of acceptance from Dr. Boyer (read). The Secretary then read a letter received from Dr. Rutherford in regard to the application of J. Brisson to be created a veterinary surgeon by Act of Parliament, on receipt of which he had written to Dr. Labrosse for formation.

A letter of regret was also read from Dr. Massie.

Dr. Higgins, dealing with the Brisson case, stated that he had met that gentleman a few times, that he was a farmer in the Township and County of Russell, running a farm there, besides doing a little in the lumber business. He had been "quacking it" ever since he knew him. As far as his character was concerned, he is a good enough citizen. He has no qualifications. He understood that Brisson told several people that he had graduated at some American college, but he was certain that he had not. He was only away on the American side for a short time, a few months, and I am sure he could not have graduated in that time.

Dr. Labrosse stated that he had not met "Professor" Brisson. He had heard of him. He had some kind of an advertisement in which he styles himself "Professor." He knew nothing about his qualifications. He had a brother practicing medicine near him and he had told him that he (Brisson) did not know the first thing about medicine. He was simply a quack and nothing else; he had one word for everything, *i. e.*, inflammation in the summer and pneumonia in the winter. He knew nothing about his character. It would certainly not be advisable to permit him to carry his project through.

Dr. Rutherford stated that it was an easy matter to have a very strong resolution passed that night protesting against any such abuse of the prerogative of Parliament, as is implied in such a proceeding as this in a civilized country, and it was simply ridiculous to be made a veterinary surgeon by an Act of the Legislature. The resolution should be sent to the Provincial Secretary, as also to the Minister of Agriculture, so as to impress upon them the necessity for action. A far better way of dealing with a matter of this kind was for each and every man to sit down and write a strong personal letter to his Member in the Legislature, protesting against such action, and to get all

other veterinarians of his acquaintance to do the same. He himself had represented the people for ten years, and this was just about one of the most effective ways of stopping a thing of this kind that is possible. They should insist on an answer, so that you can know his stand in regard to the matter. If he did not answer in a week, write again, and get your friends to do the same. This thing has got to be stopped. There had been one in 1905, one in 1906, and then this one. If they did not protest, who would? The curse of the veterinary profession had been a lack of unity. He was going to write to his member, and wanted them to do so too, and to send a strong resolution to the Provincial Secretary.

A committee of three was appointed to draw up the resolution, the committee consisting of Drs. Higgins, Hollingsworth, and the President; the Secretary also to be included.

Dr. Rutherford was reappointed Hon. President; and Dr. Thacker President. The Secretary announced that it was his intention to resign his position, giving reasons therefor. He was, however, prevailed upon to accept. Dr. Hollingsworth was reappointed Vice-President.

Dr. Haworth drew the attention of the meeting to a press clipping in regard to the Report of the Royal Commission in regard to Tuberculosis, which was read by the Secretary.

Dr. Rutherford then informed the meeting that there was good accommodation for a clinic at the Tuberculosis Experiment Station, privacy was assured, and they would be free from the unauthorized audience of last year. Dr. Higgins was appointed official reporter.

The old Council was reappointed for the ensuing year, and Drs. Marshall and Kenning were appointed Auditors.

Dr. Higgins' name was added to the Council for the ensuing year.

The Auditors' report was then read and adopted.

There was an intermission of ten minutes to enable members to pay their dues, after which, the Secretary informed the meeting that there was an application for membership from Mr. A. R. Walsh, of Perth, who was a graduate of the O. V. C. '06, vouched for by Drs. James and Thacker, and it was accepted.

Dr. Haworth then read an interesting paper on "Azoturia," after which Drs. James, Harris Lynche, Hilton, Hollingsworth and Thacker took part in the discussion thereon.

Dr. Higgins informed the meeting that he had no paper to read, but that he had a number of interesting things to show

them at the Biological Laboratory, and had therefore devoted his time to the work out there.

Dr. Hollingsworth then read an interesting paper on "Dental Terretoma," which was greeted with applause.

The Secretary read a letter from Dr. A. G. Young, of Merrickville, suggesting as a topic for discussion "If a stallion has pinkeye, what length of time afterwards is he a source of contagion?" In the discussion which followed, Drs. McGuire, Lynche, Labrosse, James, Thacker, Haworth, Hollingsworth and Higgins took part.

The Secretary read a letter from Dr. Young, of Almonte, suggesting as topics for discussion (1) "The treatment of Tetanus," and (2) "Is there a general-purpose horse?" In the discussion which followed, Drs. James, Young, McGuire, Higgins, Thacker, Haworth Lynche and Hilton took part.

Dr. McGuire then read an interesting paper on "Sanitary Water Supply for Stables," which was greeted with applause.

The Chairman then announced that the Association would meet the following morning at the Brunswick Hotel, at 9 A. M., where a bus would be in readiness to take members out to the Biological Laboratory.

The meeting then adjourned.

AT THE EXPERIMENTAL FARM.

On Tuesday, the new horse stable at the Experimental Farm was visited, where Mr. Grisdale explained the methods of ventilation installed, all of which can be operated independently for the determination of the most efficient, which will be indicated by experimental data.

At the Biological Laboratory, many pathological specimens were shown, the method of detection of sheep scab and trichina in pork were demonstrated, and trypanosomata of numerous varieties were seen both in stained and living preparations.

The Experimental Tubercular Herd on the Aylmer Road was inspected, and the pioneer work of Dr. Rutherford in dealing with this herd was highly endorsed by all present. It was a revelation to see calves playing about in an open yard (where they are kept day and night) and the temperature many points below the zero mark. No coughing was heard, a direct tribute to the practicability of the work and the effect of an abundance of fresh air and sunlight.

It was decided to hold the mid-summer meeting in Ottawa, and the Clinic at the quarters of the Experimental Tubercular

Herd, where exceptional facilities are obtainable, these being placed at the disposal of the Association by Dr. Rutherford.

A large attendance is expected at the Clinic, which will probably be held some time during July.

A. E. JAMES, *Secretary.*

VETERINARY ASSOCIATION OF THE DISTRICT OF COLUMBIA.

After ten years of unremitting effort the veterinary profession in Washington has succeeded in securing the enactment into law of a bill regulating the practice of veterinary medicine in the District of Columbia. The bill was signed by the President on February 1. In brief, it provides for the appointment of a board of examiners; describes the qualifications necessary for an applicant to apply for a license; provides for interstate reciprocity in veterinary licensure; exempts from examination veterinarians in the Army, in the employ of the Department of Agriculture, and regularly licensed veterinarians in actual consultation from other States; and provided such regulations as are necessary for the enforcement of the law.

The Veterinary Association of the District of Columbia, which was instrumental in securing this legislation, was requested by the District Commissioners to submit the names of ten veterinarians for consideration in connection with the selection of the examining board (which is to consist of five members). At a special meeting held on the 13th instant, the names of ten members of the Association were selected and were transmitted to the Commissioners, who will announce their selection shortly.

The meetings of the above-named Association are largely attended, and at the last regular meeting a very interesting and instructive paper on "Tuberculin; Its Use and Misuse," was read by Dr. J. P. Turner; resolutions recommending legislation in favor of a compulsory tuberculin test of all cows supplying milk for use in the District of Columbia were adopted, and other matters of interest were discussed.

F. M. ASHBAUGH, D. V. S., *Secretary.*

THE transport *Dix*, with over 500 head of stock, in charge of Dr. Levitt (Chicago, '06), called at Honolulu about Christmas. Dr. Monsarrat says in a letter that the stock was in excellent condition of health.

NEWS AND ITEMS.

DR. W. J. MCKINNEY, Brooklyn, N. Y., left for Hot Springs, Va., Feb. 14, to recuperate his health.

WARD GILTNER, D. V. M. (N. Y. S. V. C. '06) is assistant to Dr. C. A. Cary in the Veterinary Department of the Alabama Polytechnic Institute, Auburn, Ala.

DR. MONSARRAT, of Hawaii, who was so cordial in his invitation to the A. V. M. A. to hold the 1907 meeting at Honolulu, is out with the same enthusiasm for 1908.

DR. R. H. MCMULLEN, Veterinarian Bureau of Agriculture, Philippines, will shortly return to the United States, as the climate of the Archipelago does not agree with his health.

P. J. AXTELL, D. V. M., N. Y. S. V. C. '05, has removed from Deposit, N. Y., to Binghamton, where he has taken the practice of Dr. Garry T. Stone, who has taken a position with the Borden Condensed Milk Co.

DR. A. P. LUBACH, formerly of Long Branch, N. J., has taken a position with Dr. F. W. Porter, of Tampa, Florida, as assistant for the winter. He expects to return to Jersey City in the spring and resume his practice there.

DR. EBENEZER WATERS, the oldest veterinary practitioner in Brooklyn, N. Y., sustained serious injuries in January by being knocked down by a cab, and his leg badly bruised, which, on account of his advanced age, did not heal kindly.

DR. EMILIO FERNANDEZ, Profesor Veterinario, City of Mexico, in sending in a renewal of subscription, says: "I am well satisfied with the REVIEW; its articles are written with great wisdom, and I learn from every one of them. All the writers are veritable scientist men."

DRS. MEAKING, Littlehales and Gray (all of McK. '04) are members of the Royal Northwest Mounted Police of Canada. They are traveling veterinary inspectors, having as their duties the control of contagious diseases in animals, with headquarters at Battleford, Sask., N. W. T.

"I WANT to congratulate you on the improvement in the REVIEW. I have taken it for nearly twenty years, and I can see a great improvement in the last five years. I look forward to its monthly visits with great pleasure."—*(J. H. Taylor, V. S., Secretary Genesee Valley V. M. A., Henrietta, N. Y.)*

DR. D. ARTHUR HUGHES, Veterinary Inspector, Subsistence Department, U. S. Army, has been transferred from Omaha, Neb., to Chicago, Ill., which will be his permanent headquar-

ters. No regular inspection will be maintained at Omaha, but when a contract is awarded to a packer at that or other point an inspector will be temporarily transferred until the contract is fulfilled.

DR. D. J. MANGAN, New York City, has been appointed as veterinarian to the Street Cleaning Department, to fill the vacancy caused by the death of Dr. Arthur O'Shea. Dr. Mangan was formerly Secretary of the Veterinary Medical Association of New York County, and contributed very largely toward raising the efficiency of the Association to its present high standard, in which he retains a lively interest, and is a steady worker in its behalf.

A LOCAL PAPER of Batavia, N. Y., in detailing the events connected with the recent outbreak of rabies in that city, says: "Mr. Fargo's little son was bitten about three weeks ago by a dog owned in the Pan American Building on Court Street. At that time the animal had all the symptoms of rabies. *It has recovered and is perfectly well now.*" Dr. J. W. Corrigan in sending in the clipping, says the dog was treated with "Electric Oil." What's the use?

DR. DICKINSON GORSUCH, Glencoe, Md., has just completed and occupied his new veterinary infirmary, which is novel in that he has thirty acres of land attached to it, upon which he raises enough feed to supply his patients. Last season he garnered six hundred bushels of ear-corn from the five acres which he planted. His infirmary is built with a special eye to sanitation and general healthfulness, while nothing has been omitted in the way of modern appliances for surgical and other treatment.

DR. E. A. A. GRANGE, of New York City, has been lecturing before the Farmer's Institutes of New York State during the past fall. We find in the Report of the State Board of Agriculture two valuable addresses by Dr. Grange upon "Reproduction in Domestic Animals"—one on "Development of the Young," the other on "Delivery of the Young." There are nine well-executed plates illustrative of the lectures, all tending to give the farmer a saner idea of the subject and a more sincere appreciation of the veterinarian.

TRAUMATIC PERICARDITIS.—In the report of the Medical Department of New York Zoölogical Park for 1905, we find the following explanation of the frequency and causes of traumatic pericarditis in bovines by W. Reid Blair, D. V. S., Veterinarian to the Park, which is reproduced on account of its lucidity: "The most valuable animal lost during the year was a buffalo

cow, which was killed by the penetration of the heart by a piece of hay baling-wire five inches in length, producing the fatal disease of traumatic pericarditis. The anatomical arrangement of the pericardium and its relation to neighboring organs renders the bovine of all animals the most susceptible to pericarditis due to the introduction of foreign bodies. As a result of this anatomical arrangement any sharply pointed object capable of passing through the reticulum or second stomach and the diaphragm in the median planes would be directed toward and would enter the pericardial cavity. The causes leading to foreign-body pericarditis are strikingly connected with the manner in which bovines feed. They swallow their food quite rapidly, submitting it later on to a second mastication in the course of rumination. This method of feeding results in the animal bolting its food almost without mastication; hence the possibility of swallowing foreign bodies. These indigestible bodies pass with the food into the rumen or first stomach, and accumulate in the deepest portions of this receptacle. Owing to physiological contractions the lower wall of the rumen rises to the level of the orifice of its communication with the reticulum, and thus passes much of the material accumulated within to this organ. On account of the peculiar arrangement of the mucous membrane of the reticulum, which is divided into polyhedral cells by folds studded with papillæ and serrated at their edges, it offers a fine field for the lodgment of pointed substances, particularly pins, nails, and pieces of wire. The sharpness of one extremity of the foreign body insures its passing readily through the tissues, and as the point is the part that offers least resistance it continues gradually to penetrate. Sometimes the foreign body becomes implanted in the lower wall of the reticulum, and may be expelled directly through the medium of an abscess, thus resulting in a permanent gastric fistula. More often, however, the foreign substance penetrates the anterior wall of the reticulum and gradually works its way toward the diaphragm, impelled by the movements of the reticulum and other digestive compartments. It perforates the muscle and passes into the thoracic cavity, entering either the pericardium or the pleural sacs. Death is the inevitable termination, and occurs as a consequence of cardiac and respiratory syncope."

HORSE-SHOW "VETTING."—A Kansas City subscriber writes: "In an argument with a fellow veterinarian a few days ago, I made the assertion that at one of the shows held in Chicago in the past few years one of the veterinary inspectors did

not understand the use of the measuring standard, and was severely criticized by a leading paper for his ignorance. Can you verify this statement? I am positive that I read such an article." *Answer.*—A transient guest at a country hotel was taken ill during the night with acute indigestion, and feeling the necessity for immediate emesis he sought an appropriate place in which to deposit his supper, and as a *dernier ressort* placed the newspaper he had been reading on the floor and filled it comfortably full of indigestible hotel fare, which he slid under the bed. In the morning he left the town without removing the evidences of his illness, and did not return for several weeks. When he registered at that hotel again, the boniface took him to task for the condition in which he had previously left his room, to which the traveler replied, in Yankee fashion, by asking how he knew that he was guilty of the offence charged. "Because," said mine host, "I saw it myself in the paper." "My dear sir," replied the philosophical guest, "you must not believe everything you see in the papers." And so we have learned to discredit or to at least add quite a little salt to statements which we read in the secular press where veterinary matters are under discussion. Our correspondent, however, is correct in his contention that such an article did appear. We abstracted it at the time but refrained from reproducing it for the reasons set forth in the little story above given. Since the authenticity of the article is brought into question, we have looked it up in our scrap-book and herewith reprint it: "At the Chicago Show 'One of the official veterinarians did not know how to apply the standard to measure a horse. He slipped off the sliding arm and turned it upside down, so that the spirit level was on the bottom instead of on the top, and actually measured a horse in the arena in that fashion, reading his mark from the top instead of the bottom of the arm! Impossible as this may seem, it is a verity. In this way he measured a horse at round 15.3 that stood at about 15.1.' This almost passes belief, and yet what else can be the result of a town-bred vet. run through a short-course veterinary school. Animal Husbandry needs a place in every veterinary school course, and you cannot make a vet. out of the best material short of three winter sessions; you may turn out a horse doctor!"—[That portion of the article in single quotation marks is evidently copied from the daily press, while the final comment as to the need of animal husbandry teaching is by the editor of the *Farmer's Advocate*, of Manitoba, who is himself a veterinarian.]

VETERINARY MEDICAL ASSOCIATION MEETINGS.

Secretaries are requested to see that their organizations are properly included in the following list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 10-13, '07.	Kan. City, Mo.	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	July, 1907.	Asbury Park.	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	1st Tu. Feb., '07	Hartford.	B. K. Dow, Willimantic.
New York S. V. M. Soc'y...	Sept., 1907.	New York City	G. T. Stone, Binghamton.
Schuylkill Valley V. M. A. .	June 19, 1907.	Reading, Pa.	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Monthly.	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Call Exec. Com.	.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet. Med. Ass'n.....	.....	.....	R. E. Freeman, Dexter.
Central Canada V. Ass'n.....	July, 1907.	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n...	.....	.....	Judson Black, Richmond.
Alumni Ass'n N. Y.-A. V. C..	April, 1907.	141 W. 54th St	T. F. Krey, N. Y. City.
Illinois State V. M. Ass'n.....	July, 1907.	Springfield.	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....	.....	.....	S. Beattie, Madison.
Illinois V. M. and Surg. A....	.....	Decatur.	C. M. Walton, Rantoul.
Vet. Ass'n of Manitoba	Not Stated.	Winnipeg.	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n...	.....	.....	C. J. Fleming, Winston-Salem
Ontario Vet. Ass'n.....	Summer 1907.	Ottawa.	C. H. Sweetapple, Toronto.
V. M. Ass'n New York Co....	1st Wed. ea. mo	141 W. 54th St	W. Reid Blair, N. Y. City.
Ohio State V. M. Ass'n.....	.....	Columbus.	W. H. Gribble, Wash'n C. H.
Western Penn. V. M. Ass'n...	1st Wed. ea. mo	Pittsburgh.	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	.....	.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n...	July, 1907.	Rochester.	J. H. Taylor, Henrietta, N. Y.
Iowa Veterinary Ass'n.....	.....	.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n..	July 10-11.	Mankato.	C. A. Mack, Stillwater.
Pennsylvania State V. M. A...	March 5-6, '07	Philadelphia.	C. J. Marshall, Philadelphia
Keystone V. M. Ass'n.....	Monthly.	Philadelphia.	A. W. Ormeston, 102 Herman St., Germantown, Pa.
Colorado State V. M. Ass'n...	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n	.....	.....	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n....	June and Dec.	Providence.	T. E. Robinson, Westerly, R. I
North Dakota V. M. Ass'n....	.....	.....	C. H. Martin, Valley City.
California State V. M. Ass'n...	Mch. Je. Sep, Dc	San Francisco	C. H. Blemer, San Francisco.
Southern Auxiliary of California State V. M. Ass'n....	Jan. Apl. Jy, Oct.	Los Angeles.	J. A. Edmons, Los Angeles.
South Dakota V. M. A.....	.....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	Hans Jenson, Weeping Water
Kansas State V. M. Ass'n.....	Jan. 1908.	Manhattan.	Hugh S. Maxwell, Salina.
Ass'n Médécale Veternaire Francaise "Laval,".....	1st & 3d Thur. of each month.	Lect. R'm Laval Un'y Mon.	J. P. A. Houde, Montreal.
Province of Quebec V. M. A...	.....	Mon. & Que.	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	Nov. 19, 1907.	Not decided.	D. A. Piatt, Lexington.
Washington State Col. V. M. A.	Monthly.	Pullman, Wa.	Wm. D. Mason, Pullman.
Indiana Veterinary Association.	An'l Jan., '08.	Indianapolis.	E. M. Bronson, Indianapolis.
Iowa-Nebraska V. M. Ass'n..	.....	.....	A. T. Peters, Lincoln, Neb.
Louisiana State V. M. Ass'n..	.....	.....	E. P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	2d Thu. ea. mo.	St P.-Minneap	S. H. Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A....	April 2, 1907.	Cincinnati.	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n..	.....	.....	J. C. Robert, Agricultural Col.
Georgia State V. M. A.....	July 4, 1907.	Atlanta.	L. C. Willoughby, Experiment
Soc. Vet. Alumni Univ. Penn..	June, 1907.	Philadelphia.	B. T. Woodward, Chicago.
Virginia State V. M. Ass'n....	.....	.....	S. C. Neff, Staunton.
Oklahoma V. M. Ass'n	March, 1907.	Guthrie.	W. H. Martin, El Reno.
Veterinary Practitioners' Club..	Monthly.	.....	A. F. Mount, Jersey City.
Vet. Ass'n of Dist. of Col.....	Monthly.	Washington.	F. M. Ashbaugh, Wash., D C

PUBLISHERS' DEPARTMENT.

Subscription price, $3 per annum, invariably in advance; foreign countries, $3.60; students while attending college, $2; single copies, 25 cents.

Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address. ***Make all checks or P. O. orders payable to American Veterinary Review.***

THE OFFER OF THE REKS-O-SALT CO., of St. Louis, to return the cost of the sample treatment, if their Nitrox Anti-Toxic Salt fails in a case of Azoturia, as per March adv., is noticeable, and proves conclusively that they have made careful tests and believe absolutely in the merits of their product. Think of such an offer on AZOTURIA. It is sufficient to make every veterinarian in the country, "sit up and take notice."

VETERINARIANS are at the present time taking a very active interest in ARTIFICIAL IMPREGNATION; particularly of mares. It is now regarded as a safe and practical procedure by the best informed; the more so, naturally, when the safest and most practical mechanical devices are employed in its performance. The keen interest in this economical breeding problem by veterinarians, is causing them to study the various instruments employed. In this direction, they would do well to correspond with Mr. I. O. Crittenden, No. 15 Fox B'ld'g, Elyria, Ohio, who has made a careful, practical study of the subject. A cut of his instrument may be seen on page 13 (adv. dept.) of this issue.

THE CONDITION OF OUR CITY STREETS AND ROADS, and the spectacle of horses "down," all over the veterinarian's route as he makes his round of calls, suggests the very great usefulness of a HORSE AMBULANCE. One of the best in the world is illustrated on page 22 (adv. dept.)

INTERESTING LIST OF BOOKS, attractive to veterinarians, are seen on pages 12, 24, 31 and 33 (adv. dept.)

THE VERY ETHICAL ADVERTISEMENT OF GRUBEL CO., on page 21 (adv. dept.) of this issue, is characteristic of the gentleman at the head of the firm, and whose name the firm bears.

Disinfect with
CREOLIN-PEARSON

Owing to its germicidal qualities, Creolin has been variously imitated; but Mr. Pearson's process of manufacture insures the highest percentage of Cresols and consequently greatest effectiveness.

As a veterinary dressing Creolin-Pearson helps the growth of new tissue.

As a veterinary wash it kills parasites and keeps flies and mosquitoes away.

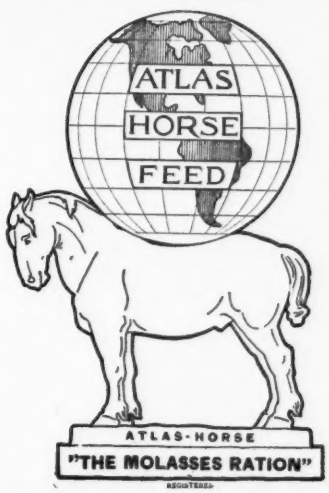
MERCK & CO., New York

ATLAS HORSE FEED

merits the veterinarian's thoughtful consideration.

IT IS NOT

a medicine, nor a condimental food; neither does it contain any drugs or chemicals whatever, nor should it be confused with so called "patent feed."



IT IS

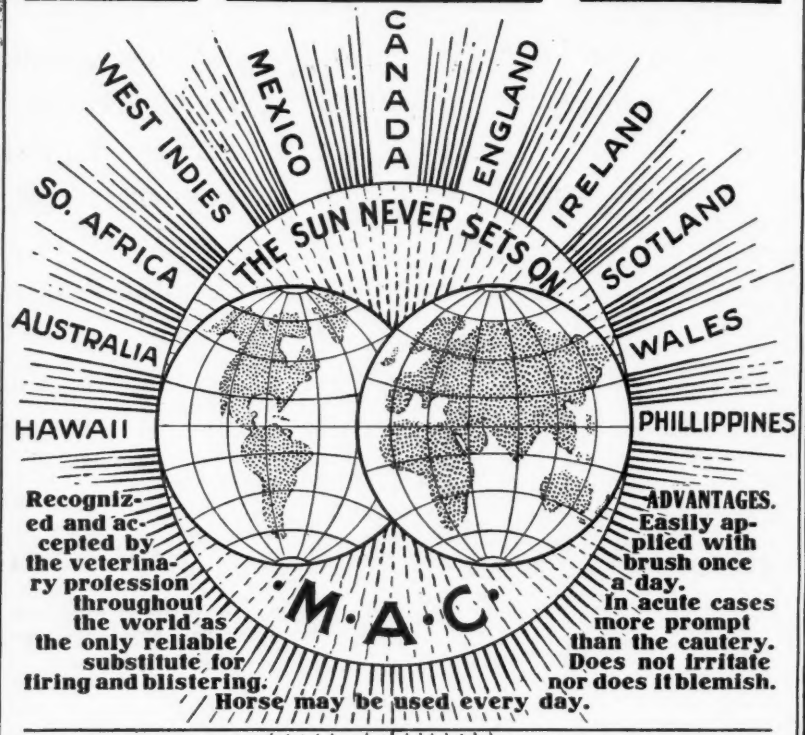
a genuine **molasses** ration made of absolutely nothing but grain and pure Louisiana cane molasses. Highly nutritive, thoroughly digestible, and infinitely more convenient than mixing your own molasses feed.

Full particulars furnished upon application to

Coakley and Meader

New York Office: 10 and 12 JAY STREET.

MIST. ARGENTI COMP.



Recognized and accepted by the veterinary profession throughout the world as the only reliable substitute for firing and blistering.

ADVANTAGES.
Easily applied with brush once a day.
In acute cases more prompt than the cautery.
Does not irritate nor does it blemish.

Horse may be used every day.

IT REQUIRES MERIT AS WELL AS PERSISTENCE TO OBTAIN CUSTOMERS IN EVERY ENGLISH SPEAKING COUNTRY IN THE WORLD.

The fact of our having done so in Two Years, Proves that MIST. ARGENTI COMP. has Merit.

Very prompt in Splint and Tendon Lameness.
Excellent in Bursal and Lateral Cartilage Lameness.
Quickly Absorbs Cartilaginous Deposits, Curbs Etc.
Far Better than Blisters in Every Case and in Acute and sub-acute cases Better than the Cautery.

PRICES **Single Bottle $2. – 1-4 Doz. $5.00**
1-2 Doz. $8.00. - 1 Doz. $15.00 - 2 Doz. $25.00.

We Pay DELIVERY CHARGES to any part of the World.

Registered and Fully Protected

CARTER-LUFF CHEM. CO. (INCORP.)

HUDSON, N.Y., U. S. A.

Cable Address "CARTERLUFF" Hudson, N Y Western Union Code.

CLARK ENG. & MFG. CO. MIL.

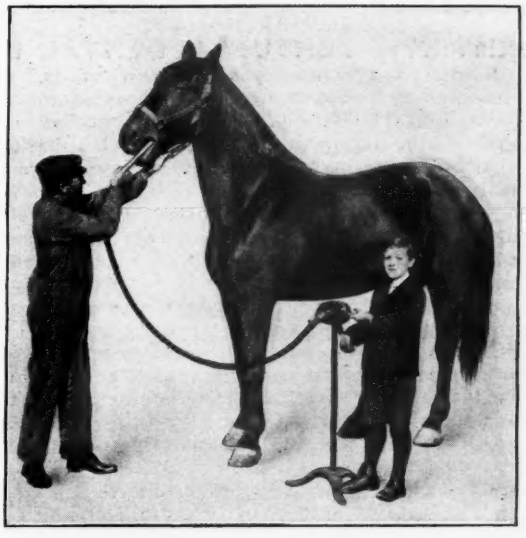


FIG. 1 is a new clipping machine, sturdy, compact, perfect in every detail of material and workmanship, and at a price within the reach of every farmer and horseman in the land. Weight, boxed, 36 pounds.

By far the most perfect clipping machine ever made.

It operates practically without friction or wear.

Crank handle turned slowly, machine works rapidly. It's mere play to run it.

Gearing is enclosed in a case, beyond the reach of dust or dirt, and runs in oil.

This is a wonderful little machine that robs even the smallest horse owner of all excuse for not keeping his horses clipped.

Because of the large number of these machines sold, we are able to make a remarkably low price on them. The machine is compact in form and can be packed in a very small space and even carried in a satchel.

PRICE, $6.75.

Humane Veterinary Power Dental Float.

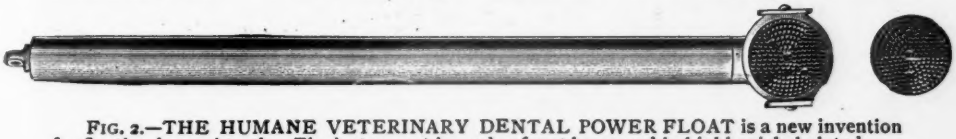


FIG. 2.—THE HUMANE VETERINARY DENTAL POWER FLOAT is a new invention for floating horses' teeth. The instrument is made of cast brass and is highly nickel plated.

This new invention not only does the work in much less time than the old time float, but you get a much smoother operation without the usual bloody mouth and bruised gums.

You will find the instrument far superior in removing the sharp points from the fifth and sixth inferior molars than by the old hand method.

The rotary movement overcomes all lost motion and keeps the cutters working from the time they touch the teeth until the job is completed.

With the Humane Veterinary Dental Power Float a complete operation is performed in a remarkably short time, and the work becomes a pleasure to the operator.

With our float, floating teeth becomes a pleasure; with the hand float it is hard, manual labor. A stable of fifteen or twenty-five horses can be easily done in a few hours.

PRICES.

Humane Veterinary Power Dental Float (Fig. 2) alone $15.00
Humane Veterinary Power Dental Float (Fig. 2) with Fig 2792 Clipping Machine..... 25.00
Humane Veterinary Power Dental Float (Fig. 2) with Fig. 1 Clipping Machine 21 00

Can furnish drills and burs for drilling teeth to fit Fig. 2. Write for special circular.

REED & MEIERHOFER,

Office and Factory,

413 S. Washington Street, Peoria, Ill.

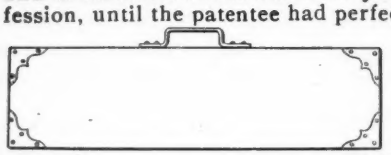
TWENTIETH CENTURY DENTAL OUTFIT

CONSISTING OF

TWENTIETH CENTURY" DENTAL FLOAT.

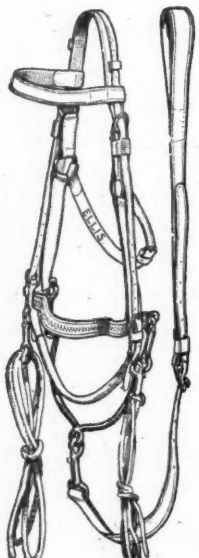
Veterinary Dentistry is revolutionized by a new "float," constructed on a principal entirely different from anything ever before offered to the veterinary profession The head of the float consists of four parallel cutting rollers, arranged transversely to the handle of the float, in such a manner, that while all four are equally distant from each other, they represent two pairs, the rollers of each pair revolving towards their fellow ; the cutting grooves on each, leaning in the direction that it rolls ; so that, as the cutters revolve, the tendency is to cling to, and cut, the surface over which they are passed. The depth of the cutting is so regulated, that it cannot exceed a certain amount at each application ; so that the work may be done in a positive manner. The float is driven by a small hand-motor six inches square, strapped to a post of the stall in which the horse is backed for operation upon the teeth. The motor can be operated by a stable boy, or anyone, regardless of intelligence, and produces from one to two thousand revolutions of the cutters per minute, as the operator may direct. The power is transmitted from motor to instrument, through a very light, jointed shaft, permitting free movements of the instrument, by the operator, in any direction. No cumbersome clipping machine necessary for power.

The whole makes a handsome, practical, and strictly scientific outfit, which can be carried in a neat case, smaller than a dental roll, and very much lighter. The above described instrument, which has been patented more than five years, and **in actual use for more than six years,** was not offered to the veterinary profession, until the patentee had perfected every mechanical detail, and gotten it well beyond the experimental stage ; and he now feels that it has withstood tests that merit it a place among the standard instruments of the age.



AND THE

"Combination" Veterinary Dental and Surgical Halter.



PATENTED MAY 13,1902.

The features which make it the halter par excellence for operations upon the teeth are, A, the "lip strap," to which the pillar or side reins are attached, which suspend the head at the proper height, and prevent it from going to one side or the other, and B, the non-compressible, metal. **heavily padded** "nose band," with offsets, keeping the cheek pieces of the halter 2½ to 3 inches from the cheeks, thus avoiding any interference whatever with the dental instruments while being employed upon the teeth. This excellent adjunct to the Veterinarian's outfit, is made of the very finest of russet stock, with brass mountings throughout. The cheek pieces are very strong, being double; the lip strap is covered with fine white rubber; the strap buckling into it being finished rawhide. The piece into which the substantial martingale is snapped, is of forged steel, heavily coated with aluminum enamel, which is rust proof. Altogether, it is a handsome, and from a practical standpoint, indispensable appliance in veterinary dentistry.

Directions for its application.

After backing the horse into his stall in the usual manner for work upon the teeth, drop off the stable halter and apply the "Combination" halter to the head ; unbuckle the lip-strap on one side, and pass it **inside the noseband,** under the upper lip over the incisor teeth and buckle quite tight. Elevate the head by fixing the side or pillar reins to the stall-posts on each side as high up as you can reach ; raising the nose a couple of feet higher than you desire it for operating ; then tighten the strap leading to the surcingle which is provided with a buckle, thereby lowering the nose to a height convenient to the operator, and he positively cannot move, and you can operate upon the teeth with an ease and precision that is most satisfying.

(*For side-lines, 5 yards sash-cord, cut in two, snaps on one end.*)

Price of Outfit, $75.00, Halter, $10.00, Float, $65.00. For further particulars address T. C. D. F., Station M New York.

THE ONLY STUFFING READY FOR USE IN THE WORLD.

Atkins & Durbrow,

160 PEARL ST.,

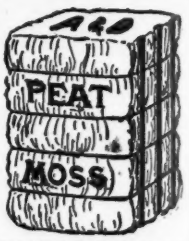
IMPORTERS OF

PEAT MOSS,

AND MANUFACTURERS OF

Patent Peat Moss Hoof Stuffing.

Send for Circulars and Prices.



THE FINEST BEDDING FOR RACE HORSES IN THE WORLD.

Red Ball Brand Stock Food.

Purely Vegetable. Not a Secret Preparation. Formula to Veterinarians.

Sold to Veterinary Surgeons in Bulk, they can make it into appropriate powders of 1 oz. to a dose.

The most Uniformly Successful Digestive Regulator Known.

Veterinarians throughout the country are using it and testifying to their successful treatment of digestive disorders.

Write for Circulars, Formula of Ingredients used in the manufacture, and Sample Package to

ATKINS & DURBROW,

160 PEARL STREET, - - - - NEW YORK.

J. F. McCUNE,

Manufacturer of **Tooth Rasps,** and All Veterinary Instruments,

855 DEKALB AVE., BROOKLYN, N. Y. TEL. 86 W. BEDFORD.

Mail Orders will receive prompt and careful attention. Leather Rolls for Dental Instruments
All kinds of Repairs and Re-nickeling. Send for Catalogue.

SPRATT'S PATENT DOG SOAP

is of the greatest value to dog owners, as it is entirely free from poison, and at the same time the most effective in the destruction of lice and fleas. Moreover, it keeps the skin free from scurf, prevents Mange and other skin diseases. No other soap should ever be used in preparing dogs for exhibition. It leaves the coat smooth and glossy.

Spratt's Patent Dog Soap contains no carbolic acid or coal tar, but is nicely perfumed and produces a fine lather. Recommended by kennel owners throughout the world.

PRICE PER TABLET, 25 CENTS BY MAIL.

Write for Catalogue, "Dog Culture" with practical chapters on the feeding, kenneling and management of dogs, also chapters on cats.

We also manufacture specially prepared foods for DOGS, PUPPIES, CATS, RABBITS POULTRY. PIGEONS, GAME, BIRDS, FISH.

SPRATT'S PATENT (AM.) LTD

450 Market St., Newark, N. J.
714 South 4th St., St. Louis, Mo.
1324 Valencia St., San Francisco, Cal.

Prof. von BEHRING'S

BOVOVACCINE

immunizes cattle against tuberculosis. 100,000 head of cattle bovovaccinated and records prove complete success. It is worth investigating; write us for literature on this most important subject.

ANTITETANIC SERUM

a cure for tetanus, as well as a most reliable preventive.

TUBERCULIN - Behringwerk.

made under the personal supervision of Prof. von Behring and *standardized* under state control by Prof. Ehrlich, of the "Royal Institute for Experimental Therapy" at Frankfort-on-Main.

Supplied in vials of 1cc. and 5cc. concentrated, and in vials of 10cc. diluted tuberculin, ready for use.

VALIDOL, an excellent analeptic and sedative; indicated in the nervous form of canine distemper, in collapse, and in vomiting spells during gastric catarrhs.

GALLOGEN, $(C_{14}H_6O_9)$. The ideal intestinal astringent, a distinct chemical compound, is an insoluble preparation of the tannic acid group (100 per cent.); of great value in diarrhœa and infectious intestinal catarrh of cattle and horses.

DYMAL $Di(C_3H_4OH.COO)_3$ The most efficient remedy in wounds of every character, purulent inflammation, mallenders, horse-pox, etc., a siccative antiseptic dusting powder.

SAPODERMIN, a soap containing Albuminate of Mercury; soluble, with great penetrating power; neither toxic, corrosive, nor irritant. In all parasitic skin diseases.

NENNDORF SULPHUR SOAP: "containing sulphur as deposited at the famous springs near Hanover."

HIRUDIN, (active principle of Leech-Extract), a faultless anticoagulant."

C. BISCHOFF & CO.,

451-453 Washington Street, NEW YORK

SANMETTO

A POSITIVE REMEDY

—IN—

DISEASES OF THE GENITO-URINARY ORGANS

—OF—

THE HORSE AND DOG.

Doctor, when you have a Horse or Dog suffering from

KIDNEY, BLADDER OR URETHRAL TROUBLE

—Nephritis, Cystitis, Urethritis—

—OR FROM—

ANY IRRITATION or INFLAMMATION of the URINARY TRACT

—Frequent, Scant or Bloody Urine—

ORDER SANMETTO

Sanmetto is largely used in Veterinary Practice for the above troubles and has been found Worthy and Reliable. It is also strongly endorsed and much used in AZOTURIA—many cases reported cured with it. Sanmetto acts as a vitalizing tonic to the Genito-Urinary Organs. It is eliminated from the System almost entirely through the Kidneys and Bladder—hence its soothing, healing and tonic power upon the entire Urinary Tract.

To avoid substitution, order in original package, thus:

℞ SANMETTO—one bottle—original package.

Dose:—For Horse, one half to one ounce three times a day.

For Dog, one teaspoonful three times a day.

Price One Bottle, $1.00. Case of One Dozen Bottles, $8.00. Sold by all Reliable Druggists.

Pamphlet on application.

OD CHEM. CO., New York.

ASSISTANTSHIP WANTED.

GRADUATE (27 years old) desires employment as assistant to veterinarian. Practice main object. Have had two summers of city practice. Will hire for one year. Address, J. R. SHAND, care of CHICAGO VETERINARY COLLEGE, 2537 State Street, Chicago, Ill.

REVIEWS WANTED.

APRIL, 1903; Feb., 1904; Sept. and Oct., 1905 and April, 1906. Address, ROBERT W. ELLIS, 509 W. 152d St., New York City.

ASSISTANT WANTED.

MUST be a graduate from some Veterinary College in the United States. State age, and salary expected. Address, W. HARRY LYNCH, D.V.S., PORTLAND VETERINARY HOSPITAL, Portland, Maine.

ASSISTANTSHIP WANTED.

A second year student desires a position for coming summer vacation in an extensive practice. Address, W. L. WILLIAMS, Ithaca, N. Y.

A most Popular Hypodermic Syringe with the Veterinary Medical Profession.

Substantial in Construction.

Perfect in Workmanship.

DIMENSIONS OF CASE—6½ inches in length, 2½ inches wide, 2 inches deep.

VETERINARY HYPODERMIC SYRINGE.

In Morocco case, velvet lined, containing two straight needles, one-half curved needle for intra venous injection, one trocar and canula, and twelve tubes for Hypodermic Tablets.

Our **Syringes are substantially made, especially for the use of Veterinary Surgeons,** with strong glass barrel of three drachms capacity, protected by fenestrated metal cylinder, with rings for thumb and fingers.

By removal of the lower metal end, one or more tablets may be placed directly in the syringe —replacing cap and attaching needle, water can then be drawn in upon the tablets and solution effected by shaking the syringe.

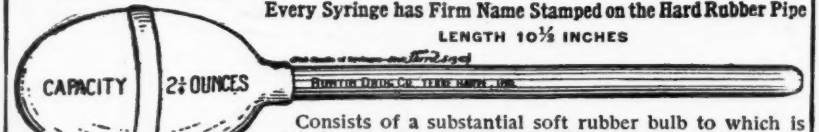
Our syringes are made with needles to attach either by slide or screw-thread. In ordering specify which is preferred.

Price of Syringe and case complete..... .....$4.00 (reduced from $5.00.
Extra Needles, straight..... .....$ .35
Extra Needles, curved..... 35
Extra Trocar and Canula..... 50

BUNTIN DRUG CO'S VETERINARY BULB SYRINGE

For administering Liquid Medicines to Horses and Cattle by the Mouth or Rectum

Every Syringe has Firm Name Stamped on the Hard Rubber Pipe



Consists of a substantial soft rubber bulb to which is attached a very strong, hard rubber pipe. In giving medicine or food with this Syringe there is no danger of injuring the animal's mouth or breaking the Syringe; any quantity, from a teaspoonful to two ounces may be given at one injection.

BUNTIN DRUG CO., TERRE HAUTE, INDIANA
Manufacturers of Veterinary Hypodermic Tablets and Hypodermic Syringes

(Length 10½ inches.)

Prices Bulb Syringes, 75c. each; per half doz., $4.00; per doz., $7.50.

BUNTIN DRUG COMPANY,

600 Wabash Avenue **TERRE HAUTE, INDIANA**

EIMER & AMEND, Agents, 205-211 Third Ave., New York.

BUNTIN DRUG CO.'S SOLUBLE HYPODERMIC TABLETS.

VETERINARY.

No.			Per tube of 10 tablets.
114	Aconitine, Crystals	1-40 gr.	$0 12
115	Aconitine, Crystals	1-30 gr	13
100	Aconitine, Crystals	1-20 gr	15
116	Aconitine, Crystals	1-10 gr	17
117	Aconitine, Crystals	1- 6 gr	22
118	Aconitine, Crystals	1- 4 gr.	27
159	Arecoline Hydrobrom	½ gr	1 00
160	Arecoline Hydrobrom	1 gr	1 80
101	Atropine Sulphate	1- 4 gr	15
121	Atropine Sulphate	1- 2 gr	18
119	Atropine Sulphate	1 gr	33
158	Barium Chloride Comp (Ellis)		18
	Barium Chlor	7 grs.	
	Digitaline	1-12 gr.	
152	Cardiac Tonic		25
	Digitaline, Pure	1-10 gr.	
	Sparteine Sulph	1- 5 gr.	
	Strychnine, Nitrate	1- 8 gr.	
102	Cocaine Muriate	1 gr	35
124	Cocaine Muriate	1-½ grs	45
125	Cocaine Muriate	2 grs	55
120	Cocaine, 4½ grs. for Veterinary Anesthesia (One tablet dissolved in 1 drachm of water makes an 8-per cent. solution.)		1 10
103	Colchicine	1- 4 gr	60
126	Colchicine	1- 2 gr	1 00
127	Colic (Knowles)		54
	Morphine Sulph	2 grs.	
	Atropine Sulph	1- 4 gr.	
	Aconite Cryst	1-20 gr.	
104	Coniine Hydrobromate	1- 2 gr	43
128	Coniine Hydrobromate	1 gr	60
105	Digitaline, Pure	1- 8 gr	20
129	Digitaline, Pure	1- 4 gr	35
156	Ergotine	2 grs	18
157	Ergotine	4 grs	27
113	Eserine Salicylate	1- 4 gr	50
133	Eserine Salicylate	1- 2 gr	75
134	Eserine Salicylate	1 gr	1 25
135	Eserine Salicylate	1½ grs	1 90
106	Eserine Compound		1 00
	Eserine Salicylate	1- 4 gr.	
	Pilocarpine Muriate	1- 2 gr.	
	Strychnine	1- 8 gr.	
153	Eserine and Pilocarpine		1 50
	Eserine	1- 2 gr.	
	Pilocarpine	1 gr.	
154	Colic (Forbes)		2 75
	Eserine Salicylate	1 gr.	
	Pilocarpine Mur	3½ grs.	
107	Hyoscyamine Sulphate, Crystals	1- 8 gr	85
146	Hyoscyamine Sulphate, Crystals	1- 4 gr	1 30
108	Morphine Sulphate	1 gr	19
136	Morphine Sulphate	1½ grs	27
137	Morphine Sulphate	2 gr	33
138	Morphine Sulphate	2½ grs	37
155	Morphine Sulphate	3 grs	50
109	Morphine and Atropine		35
	Morphine Sulph	1½ grs.	
	Atropine Sulph	½ gr.	
139	Morphine and Atropine		35
	Morphine Sulph	1½ grs.	
	Atropine Sulph	¼ gr.	
140	Morphine and Atropine		40
	Morphine Sulph	2 grs.	
	Atropine Sulph	1-4 gr.	
141	Morphine and Atropine		45
	Morphine Sulph	2½ grs.	
	Atropine Sulph	1-4 gr.	
142	Nitroglycerine	1-10 gr	14
143	Nitroglycerine	1-5 gr	17
110	Pilocarpine Muriate, Crystals	1-2 gr	55
144	Pilocarpine Muriate, Crystals	1 gr	90
145	Pilocarpine Muriate, Crystals	1½ grs	1 10
111	Sodium Arsenite	1 gr	12
112	Strychnine Sulphate	1-4 gr	12
147	Strychnine Sulphate	1-2 gr	13
148	Strychnine Sulphate	1 gr	14
149	Veratrine Muriate	1-4 gr	12
150	Veratrine Muriate	1-2 gr	14

Please order by number.

Goods sent post-paid to any part United States or Canada upon receipt of price.

SAL-LISTER

(A SOLUBLE POWDER.)

Antiseptic, Antizymotic, Deodorizer and Parasiticide.

FORMULA: Carbolic Acid, Boric Acid, Boroglyceride, Sozolodol, Hydrastine, Sodium Biborate, Eucalyptol, Thymol.

Valuable Surgical Dressing, either dry or in solution.

NEW YORK UNIVERSITY.

New York-American Veterinary College.

(New York College of Veterinary Surgeons, chartered 1857, and the American Veterinary College, chartered 1875.)

Session 1906-1907 began September 27th, 1906.

Write for new catalogue and all information to

A. LIAUTARD, M.D., V.M., DEAN,

141 West 54th Street, New York City.

NEW YORK STATE VETERINARY COLLEGE,

ESTABLISHED AT

CORNELL UNIVERSITY, ITHACA, N. Y.

BY CHAPTER 153, LAWS OF 1894.

The best equipment for scientific and practical instruction, for undergraduates and post-graduates. Most varied practice for students in the free clinics. Regular graded course, three years of nine months each. Entrance by Regents' "Veterinary Student Certificate," or by examination, September 15th, 1905. Matriculation September 23d, 1905.

Tuition Free to New York State Students.

For extended announcement address,

Professor JAMES LAW, F. R. C. V. S., Director.

ONTARIO VETERINARY COLLEGE, Limited,

40, 42, 44 and 46 TEMPERANCE STREET, TORONTO, CANADA.

Patrons.—Governor-General of Canada and Lieutenant-Governor of Ontario.

SESSION 1906-1907 BEGAN OCTOBER 17th.

All Experienced Teachers. - - - Fees, $65.00 per Session.

Prof. SMITH, V.S. (Edin.) F.R.C.V.S., Etc., Principal.

CHICAGO VETERINARY COLLEGE

2537 and 2539 State Street, Chicago, Ills.

Organized and Incorporated under the Laws of the State of Illinois, 1883.

Regular Session commences the first week in October in each year.

For Prospectus giving all information as to curriculum, fees, etc., address the Secretary

JOSEPH HUGHES, M.R.C.V.S.,

2537 and 2539 State St., Chicago. Ills.

TALLIANINE.

Trade Mark Registered.

We have pleasure in informing the veterinary profession that *Tallianine* has been greatly improved, and as now supplied contains seven volumes of active ozone, and further, this improved *Tallianine* possesses the valuable property of retaining its stability and activity for a greater length of time than the original product.

We are therefore in a position to guarantee the stability of the present type of *Tallianine* for at least seven months, which will remove all possibility of obtaining negative results, due to the use of a product after its therapeutic efficacy has been reduced.

We have in contemplation the system of dating the tubes, limiting the period during which they should be used, at the expiration of which they may be returned for replacement with fresh *Tallianine.*

Tallianine treatment has been demonstrated to be the most rational and positive for Pneumonia, and all allied ailments in the animal, including typhoid, influenza, etc., and all instances where a septic condition of the blood exists.

Complete Literature with records of cases upon request.

Sole Agents for the United States, Canada and Mexico.

WALTER F. SYKES & CO.,

85 WATER STREET, NEW YORK.

132 Chestnut Street,
PHILADELPHIA, PA.

113 Broad Street,
BOSTON, MASS.

WESTERN AGENTS

R. R. STREET & CO., 184 Washington Street, CHICAGO, ILLS.

Handling horses made easy by using the Veterinarian's Favorite Ambulance.

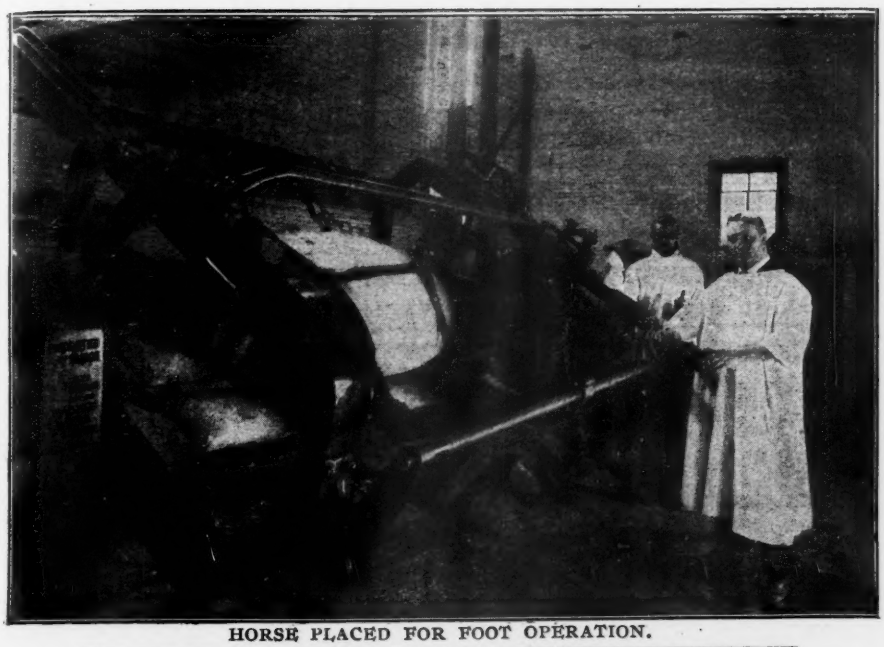
RECH-MARBAKER CO.,

SPECIALISTS—DESIGNERS.

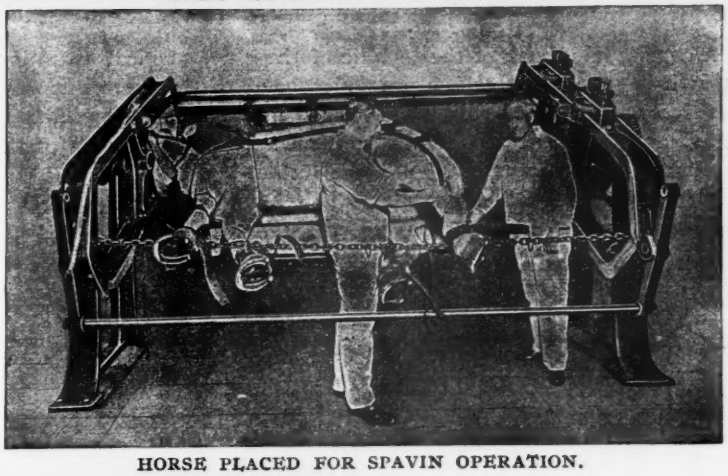
MAKERS OF HIGH GRADE AMBULANCES.

Girard Ave. and 8th St., PHILADELPHIA, PA.

Send for information and catalogue.



HORSE PLACED FOR FOOT OPERATION.



HORSE PLACED FOR SPAVIN OPERATION.

ROARING OPERATION.

The Best Veterinary Operating Table in the World.

Correspondence Solicited.

THE

BRADWOOD MFG. CO.,

(INC.)

NEW HAVEN, CONN.

LACERATED WOUNDS.

HISTORY. Bay gelding. The animal was led to the blacksmith shop and was shod with Neverslips. In returning from the shop he broke away from the man leading him, and began to jump, etc. In some way the cock on the nigh forward foot tore the knee open, leaving a lacerated looking wound.

TREATMENT. Lacerated tissue trimmed under aseptic precaution. Wound was douched out with a saline solution until the hæmorrhage ceased. The edges of the skin around the wound were brought together by interrupted silk sutures. The whole knee, except the *wound*, was encased in a thick, cold coating of Anti-Itis. Iodoform 10 per cent. gauze placed over the wound, cotton batting placed over all, and a cotton bandage completed the dressing.

The second day the dressing was not removed. The following day the bandage was removed and there was no swelling of the leg. The wound gave off healthy exudate. A new dressing of Anti-Itis was applied, same as first. Iodoform gauze placed over the wound, cotton batting and bandage completed the dressing.

On the third day the height of inflammation is usually present. Bandage removed; no swelling of the knee, slight exudate, temperature normal. Anti-Itis was removed and the wound was douched out with a saline solution. This treatment was continued for six days. At the end of that time, the stitches were removed, showing a little pus around each one. The horse made a complete recovery in 15 days.

VETERINARIANS. This treatment is somewhat different than the old-fashioned method. You, who have had experience, know that a case like described above usually produces synovitis, swelling, and sloughing, and usually requires a six weeks' treatment.

VETERINARIANS. Can you afford to practice without the use of Anti-Itis. The composition of Anti-Itis is different from that of any other preparation of the kind. At the same time, large manufacturers, who manufacture everything, say this is like everything else.

We wish to say to you that Anti-Itis is not made of blue clay, pipe clay, whiting, or kaolin earth, but from earths that are carefully selected and prepared, combined with other drugs to give it its name, ANTI-ITIS (anti inflammation). Its action is antiseptic, sedative, anodyne, and hydro-absorbent.

The price of Anti Itis is not to be compared with the price of the cheap preparations that are mixed up with kaolin earth to sell to you at a very small cost.

Remember this. The best practitioner wins. To accomplish this, he must use the best material, or he certainly will fail.

If you have not had a sample of Anti-Itis, send for one. On sale at all reliable jobbers.

ANTI-ITIS, Inc., Danvers, Mass.

PETROGEN—WYETH

A non-irritating, highly penetrating and soluble medium for the administration of medicaments which ordinarily prove difficult of use because of their irritating properties.

Petrogen is particularly well adapted for veterinary practice for the administration of iodine.

Iodine=Petrogen will cause no irritation or blistering, nor will its continued application result in a falling out of the hair, or cause any permanent staining.

Iodine=Petrogen is indicated in all forms of sprains, stiff joints, shoulder lameness, swellings, bone enlargements, and all conditions where a stimulating action on the glands and blood-vessels is required.

Iodine=Petrogen may be employed freely and indefinitely without producing the tendency to blister, which so often precludes entirely the use of the tincture of iodine.

LITERATURE AND SAMPLES OF IODINE-PETROGEN, OR OTHER PETROGEN COMBINATIONS, WILL BE SUPPLIED ON REQUEST

JOHN WYETH & BROTHER, Inc.

PHARMACEUTICAL CHEMISTS, PHILADELPHIA

STANDARDIZED PHARMACEUTICALS

for the VETERINARY PROFESSION.

Our extensive plant is devoted *exclusively* to the manufacture of high-grade pharmaceutical preparations. These include a complete line of remedies for veterinary practice, which we sell *only* to veterinarians. We have no retail department for supplying the laity.

Our long experience as manufacturers enables us to guarantee complete satisfaction to the profession. You will find our goods perfect in quality, accurately prepared and sold at reasonable prices.

LEADING VETERINARY SPECIALTIES.

VETRINOL
(Veterinary Unguentine.)

Ideal antiseptic astringent ointment for Burns, Sores and Inflammatory Skin diseases.

Vetrinol has the same wide range of usefulness in veterinary practice that UNGUENTINE has as a surgical ointment for human kind.

VETRINOL DUSTING POWDER

A dry dressing for Saddle and Collar Galls and all open sores on animals.

SYRUP OF EUCALYPTUS COMPOUND.
(Veterinary)

For the treatment of Coughs, Bronchitis, Laryngitis, Pneumonia, etc., in horses, cattle and dogs.

Endorsed and prescribed by prominent veterinarians, with remarkably successful results.

KAODERMA.

A soothing, antiphlogistic preparation, composed of Dehydrated Aluminum Silicate, Boric Acid, Salol, Gaultheria and Eucalyptus, combined with chemically pure Glycerine.

ZEMACOL.
(Eczema Colloid.)

A soothing, absorbable emollient for the treatment of eczema and mange in all domestic animals.

THE NORWICH PHARMACAL COMPANY

Main Offices: NORWICH, NEW YORK. **NEW YORK OFFICE: 70 and 72 Fulton St.**
Branches: NEW YORK and CHICAGO. **'Phone 3028 John.**

☞ **We make a specialty of preparing Private Formulas in packages ready to dispense.**

PARIS 7 RUE MEYERBEER — CABLE ADDRESSES — LONDON 80 LOMBARD ST.

PAVACO - PARIS, PASTEUR - NEW YORK — SUFFOCADOR-LONDON, ANTHRAX - CHICAGO

PASTEUR BIOLOGICAL PRODUCTS VACCINE Co. Ld.

NEW YORK 366-368 WEST 11TH ST. — SAN FRANCISCO — CHICAGO 441-445 WABASH AVE.

Pasteur Anthrax or Charbon Vaccine—For the prevention of Anthrax in Horses, Mules, Cattle, Sheep and Goats.

Successfully used since 1882 upon over 40,000,000 animals in all parts of the world. Made by scientists who co-operated with Pasteur in his discovery of Anthrax Vaccine.

Antistreptococcic Serum—Veterinary—For the prevention and cure of all forms of streptococcic infection.

Now indicated in all conditions due to streptococcic infection. Notably strangles, distemper, *Shipping Fever* as well as anasarca or purpura hemorrhagica. Liquid and *dry*. The *dry keeps indefinitely*.

Antitetanic Serum—Veterinary—For the prevention and cure of lockjaw.

The most reliable cure for tetanus, and an infallible preventive. Liquid and *dry*. The *dry keeps indefinitely*.

Mallein and Mallein Solution—For the diagnosis of Glanders.

Tuberculin and Tuberculin Solution—For the diagnosis of Tuberculosis.

Blackleg Vaccine, powder form
Blacklegine, cord form
Blacklegules, pellet form
—For the prevention of Blackleg in Cattle.

Successfully used since 1884 on over 36,000,000 calves. *Produced by the discoverers, Profs. Arloing, Cornevin and Thomas.* Powder, cord and pellet form and single and double kind. The cord is ready for use and called "**Blacklegine.**" "**Blacklegules,**" pellet form, administered with injector containing 100 doses. The single is for large herds and ordinary stock, and the double for small herds and choice stock.

Eucamphol—Veterinary—Best and pleasantest actual disinfector and antiseptic made.

Lincoln Disinfectant—General disinfectant.

Pasteur Vaccine Co. Rat Virus—To exterminate rats and mice.

Squirrilin—To exterminate ground squirrels.

Traumatol (Iodocresine)—Antiseptic and non-poisonous microbicide.

Full literature and prices will be mailed upon application.

PARIS
7 RUE MEYERBEER
ALEXANDRIA
MELBOURNE
BUDAPEST
AMSTERDAM
CALCUTTA
RIO JANEIRO
HASTINGS, N.Z.
LYONS
BERLIN
ST. PETERSBURG
BRISBANE
HONG KONG
SYDNEY
BUENOS AYRES
HAVANA

PASTEUR

IN ORDERING SERO-VACCINS

SERUMS VACCINS VIRUS FERMENTS

SPECIFY "PASTEUR" AND GET THE GENUINE

VACCINE Co Ld.

LONDON
80 LOMBARD ST.
JOHANNESBERG
ROME
COPENHAGEN
TURIN
WINNIPEG
MEXICO
STUTTGART
UTRECHT
VIENNA
LILLE
LIMA
MANILA
MONTREAL
HONOLULU
ST. GALL

CONCESSIONNAIRES OF THE INSTITUT PASTEUR BIOLOGICAL PRODUCTS, PARIS

NEW YORK-366-368 WEST 11TH ST. — CHICAGO.441-445-WABASH AVE.

IMPORTANT VETERINARY PUBLICATIONS

GENERAL VETERINARY SURGERY.

By DR. MED. EUGEN FROHNER.

Professor in the
Royal Veterinary College in Berlin.

Authorized Translation from the Third Revised Edition.

By D. Hammond Udall, B. S. A., D.V. M.
Ohio State University.

This translation is from the 1905 edition; the subject is presented in a scientific manner; is both concise and complete, and based on the experience of many years of carefully prepared statistics from the largest clinic of its kind in the world.

Price $3.00 net, postpaid.

THE PATHOLOGY AND DIFFERENTIAL DIAGNOSIS OF INFECTIOUS DISEASES OF ANIMALS.

Second Edition, Revised and Enlarged.
By
VERANUS ALVA MOORE, B. S., M. D.
Professor of Comparative Pathology, Bacteriology and Meat Inspection, of the New York State Veterinary College, Cornell University, Ithaca, N. Y.

"The Profession will gladly welcome this new book, which brings the subject right up to the present state of the wonderful progress made in the study of infectious diseases. The book deals with the most important infectious diseases of animals that occur in this country."—AMERICAN VETERINARY REVIEW.

Price $4.00 net, postpaid.

VETERINARY DOSES AND PRESCRIPTION WRITING.

Second Edition, Revised.
By PIERRE A. FISH, D. Sc., D V. M.
Professor of Veterinary Physiology and Pharmacology, N. Y. State Veterinary College, Cornell University, Ithaca, N. Y.

A full list of drugs with their doses for the different domestic animals based upon the eighth (1905) revision of the U. S. Pharmacopœia, Therapeutic Terms and a list of terminations of medical terms applicable to Veterinary Medicine, Illustrative Prescriptions, Thermometric Equivalents, Weights and Measures, Latin Words and Phrases used in Prescription Writing, Incompatibilities, Poisons and their Antidotes. Red leather flexible covers. Convenient for the pocket.

Price $1 00 net, postpaid.

EXAMINATION OF THE URINE OF THE HORSE AND MAN.

By PIERRE A. FISH, D. Sc., D. V. M.

Simple directions are given for performing the tests necessary to determine the normal or abnormal conditions of the urine.

Just published. Price $1.50 net, postpaid.

This important subject should receive the careful consideration of all practising Veterinarians. The Manual will aid you greatly in your examinations.

LABORATORY MANUALS.

By PIERRE A. FISH, D. Sc., D. V. M.

ELEMENTARY EXERCISES IN PHYSIOLOGY.

Part 1.—Chemical Physiology. Part 2.—Experimental Physiology.
Second Edition. Revised and Enlarged. Price $1.50 net, postpaid.

ELEMENTARY EXERCISES IN MATERIA MEDICA AND PHARMACY.

A laboratory manual treating of the more commonly used inorganic and organic drugs. The pharmaceutical section includes examples of the different preparations in the U. S. Pharmacopœia.

"There are features in this book which betoken a grateful advance in the medical and pharmaceutical professions. We congratulate Prof. Fish on his work."—*Alkaloidal Clinic.*

Second Edition. Revised and Enlarged. Price $1.50 net, postpaid.

Above publications sent postpaid on receipt of price named. The works of all publishers in Veterinary Science supplied promptly.

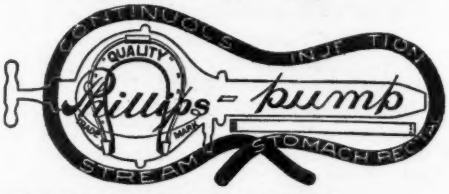
TAYLOR & CARPENTER,

VETERINARY PUBLISHERS AND BOOKSELLERS,

ITHACA, NEW YORK.

PHILLIPS VETERINARY SPECIALTIES.

Phillips "Perfected" Stomach Tube. Phillips "Acme" Stomach Tube,
Phillips Soft Rubber Catheter. Phillips "Continuous Stream" Injection Pump.
Phillips "Faultless" Decayed Root Extractor.



PHILLIPS "PERFECTED" STOMACH TUBE.

For the instant relief and positive cure of Stomach Flatulence, Acute Indigestion, Gastritis and Choke.

In the May 1904 number of the *American Veterinary Review*, an article appeared introducing **the operation of siphoning the stomach of the horse.**

To **insure** the operation becoming a success in every surgeons hands, I **introduced a practical tube** for this special purpose and styled it the **Phillips "Perfected" Stomach Tube.**

Great care was taken to obtain in this tube the requisite qualities to make a **perfect instrument,** i.e.: (1st) **Dimensions;** inside and outside diameters, with a length, ten feet, to reach from the stomach to the floor, thereby giving good draft. (2nd) **Consistency;** care taken to have it **pliable** making it adaptable to the delicate mucous membranes yet **firm** enough to withstand the pressure to overcome the resistance of the œsophagus. (3rd) **Quality;** the tube is made of **fine rubber,** that when it is **lifted** by its **center** the **ends do not assume the coiled position.**

At the present time **hundreds of veterinary surgeons in the United States and Canada are practicing the operation** and many letters attest the merits of the Phillips "Perfected" Stomach Tube.

The Tube with the accompanying Stilet furnishes the Surgeon with the finest Probang ever offered to the profession.

Directions for using accompany each tube. Price $7.00.

PHILLIPS "ACME" STOMACH TUBE.

My first attempt was to get the above qualities in a **glass-moulded** tube, but failed until recently to find a **manufacturer to meet my definite requirements. I now have a glass-moulded tube** that is **just as practical** as the **Phillips "Perfected".** It has the **same consistency** and **dimensions** as the **Phillips "Perfected"** with that **extraordinary finish** that glass-moulds give to rubber goods

Directions for using and Stilet accompany each tube. Price $8.00.

PHILLIPS SOFT RUBBER CATHETER.

In presenting **Phillips soft rubber Catheter** to my brother practitioners I am **confident** that **I am placing a superior article** on the market. It is **four feet long,** with a **lumen** that is **large,** capable of drawing three quarts as quickly as the French catheter draws two. The **advantage** in this is when the **urine** is **thick.**

This catheter is nearly as **stiff** as the **French make is,** when it is warmed to the temperature of the body. **By using the accompanying Stilet it makes a very stiff catheter.**

The **advantages** over the old catheters, are: (1st) They can be **placed** in a **small space** and will not assume a coil when unfolded. (2nd) They can sustain a heavy **bruise without injury.** (3rd) They **do not check or crack** in cold weather from use, hence **no rough surface to wound the urethra, or carry infection into the bladder.** (4th) It can be **easily disinfected.**

Directions for using and a Stilet accompany each soft Catheter. Price $1.75.

PHILLIPS "CONTINUOUS STREAM" INJECTION PUMP.

The **Phillips "Continuous Stream" Injection Pump"** is made of **solid brass** with **rubber valves** that can be replaced when worn. It is **easily taken apart** and **occupies** but **little space. It throws a continuous stream with a very easy stroke. No one should practice siphoning the stomach without using an injection pump,** for with it the benefits obtained by the tube are trebled.

A stomach tube attached to the pump makes an IDEAL rectal and colon injection outfit. Price $8.00.

PHILLIPS "FAULTLESS" DECAYED TOOTH EXTRACTOR

The only extractor that operates within the Alveolar cavity, thus insuring the complete and easy extraction of shells and decayed roots, whatever their location within the Alveoli. I claim for this instrument: (1st) **Absolute completeness** for **shell** and **root extracting.** (2nd) **Ease of adjustment** and of operating. (3rd) A **saving** of **time.** (4th) **Compactness** in **size** and **shape.** (5th) **Inexpensiveness. Price $8.00.**

Address all orders to, **J. M. PHILLIPS, D. V. S.,**
1009 N. GARRISON AVE., ST. LOUIS, MO.

Caution; Beware of imitations and so-called Phillips tubes. All tubes sold by me or my agents have been personally inspected by me and bear my trade mark stamped upon them.